



Hugh Cecil Earl of Lonsdale.

77 A Practical Treatise on Glanders and Farcy in the Horse; descriptive and explanatory of its origin, progress, and termination, and the most effectual methods of treatment and cure. By **Richard Vines**, Veterinary Surgeon, Teacher of Anatomy and Physiology at the Royal Veterinary College.

It is the discrimination between the *cause* and *effect* of disease, which leads to the perception and knowledge of true principles; but this is only to be gained by tracing diseases to their origin.

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A
PRACTICAL TREATISE
ON
GLANDERS AND FARCY
IN THE
H O R S E ;

DESCRIPTIVE AND EXPLANATORY OF ITS ORIGIN,
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AND
THE MOST EFFECTUAL METHODS OF TREATMENT AND CURE.

BY RICHARD VINES,
VETERINARY SURGEON :

TEACHER OF ANATOMY AND PHYSIOLOGY AT THE ROYAL VETERINARY
COLLEGE.

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Practical Treatise
Glanders and Erysipelas
Horse

THEORY AND PRACTICE OF THE DISEASES
OF THE HORSE

BY JOHN GALT, ESQ., F.R.S.

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EXPLANATION OF THE PLATES.

PLATE I.

FIGURE 1, Exhibits the septum of the nose, with a portion of the bone, &c., removed, the *Healthy* and Natural appearance of the Mucous Membrane.

FIGURE 2, Exhibits the *Unhealthy* and Ulcerated state of the Mucous Membrane and septum of the nose, as seen in Glanders.

PLATE II.

FIGURE I, Represents a portion of Lung taken from a Glandered Horse with Tubercles of various sizes, and in a state of suppuration.

A, a bronchial tube.

FIGURE 2, Represents a portion of Lung containing Vomicæ divided.

A, a bronchial tube.

B, a blood-vessel.

FIGURE 3, Represents a portion of sound healthy Lung.

B, &c. blood-vessels and bronchial tubes.

PLATE III.

Represents the Leg of a Horse, with Farcy Ulcers. See a description of the case page 180.

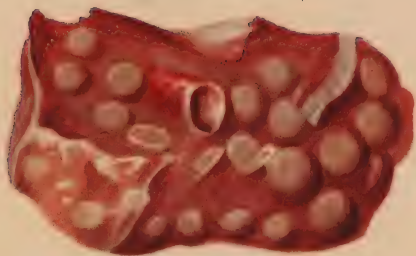
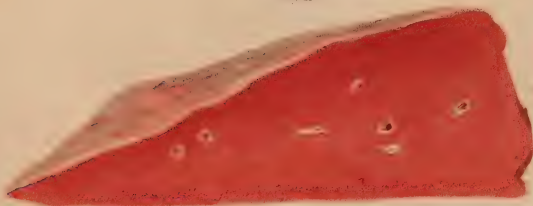


Fig II

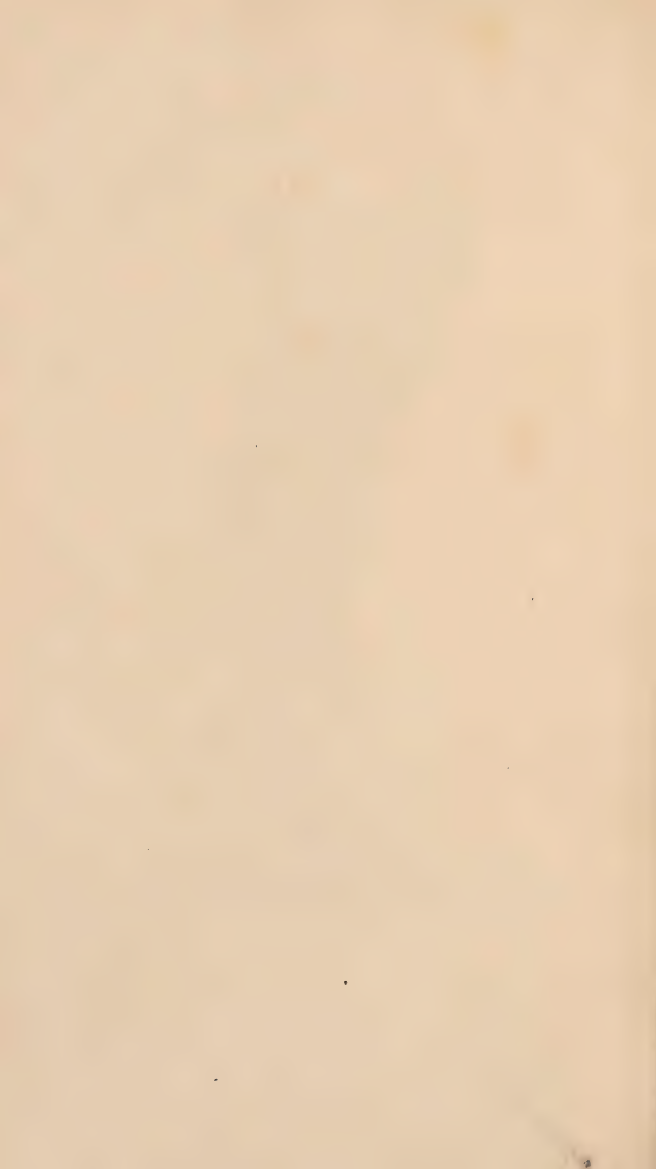
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Fig III







PRELIMINARY REMARKS.

IN all probability those appearances or symptoms of disease in the horse denominated Glanders and Farcy,* did not exist prior to his removal from his native clime, as they hitherto appear to be known only in those countries which are uncongenial to his system.† I am principally led to this supposition from the causes which produce them being apparently nearly similar in all countries where Glanders and Farcy are known. The ancient Greek writers afford us but little valuable information on the *diseases* of horses, as their works, prior to Xenophon,‡ appear to have been

* Called Glanders probably from the enlargement of the sub-maxillary *glands*, usually accompanying the discharge from the nose.—Farcy, from *farci*men *farcio*, any thing stuffed or crammed, as the legs generally appear when so diseased.

† See note, page 167.

‡ Xenophon lived about four hundred years before the Christian era.

lost, and those which have been subsequently written, but little known; though Dupuy has stated that Hippocrates assures us, confirmed Glanders was incurable. From the early Latin authors nothing of importance or satisfactory is to be found on the subject, until we come to the fourth century, when we find Vegetius treating on both diseases. He has described the symptoms of the *Morbus Humidus*, or *Glanders*; and informs us, that the ancients called it the *Profluvium Atticum*, and recommends “the injection of wine and oil made warm, into the nostrils, and to tie the head down with a cord to his legs, forcing him so to walk that the humour shall run out; if blood flows it is a good sign.” He has also treated on “the *Morbus Farcininosus*, or the *Farcy*, (and says) that “it is occasioned by humors forming between the skin and flesh, and making collections in various parts of the body, diminishing in some, and breaking out in others; that though the disease be contagious, it may be cured if taken in time, and while the internal viscera are sound.”*

Most probably, somewhat similar notions to these continued in vogue, and perhaps with little or no alteration, for several centuries; and as they occupied that period which has been termed the dark

* Short History of the Horse, and Progress of Horse Knowledge. By Mr. B. Clark. 1824. Page 15.

ages, we are left entirely in doubt as to what really occurred, and so pass at once to the early writers of our own country.

The first of any importance seems to have been Blundevill, who published a work on the horse in 1609. He entertained some very absurd and obscure notions of diseases, and rather strange to say, among them we find it stated that Farcy is occasioned by a *poison*; this he appears to have borrowed from the Italians or French. His followers, Markham, De Gray, Mascal, A. Snape, &c., had not more enlightened views than himself, and only differed from one another in minutiae; for whenever they were fortunate enough to record a noticed fact, they very soon afterwards lost themselves in absurd reasonings.

The next author to which we shall advert is M. Solleysel, a celebrated Frenchman, whose first work came forth in France about the year 1669, and was translated into English by Sir William Hope, at the end of the sixteenth or beginning of the seventeenth century. It is in consequence of this writer's superior practical knowledge, and from his having been a real matter-of-fact man, that we have made so many selections during the progress of our work. It therefore renders unnecessary in this place any further observations on this very able Veterinarian.

Gibson and Bracken, are the next English writers

that we meet with of any importance, and although they have not added much more than their predecessors in the way of cure, yet we must give them credit for a better description, and a more rational mode of treatment; and in justice to Bracken, we can but record his disbelief in the infectiousness of Glanders.

In the year 1749, the *Sieur La Fosse*, Farrier to the King of France, presented a memoir to the Royal Academy of Sciences, wherein he maintained the local nature of Glanders, and of its being always *seated* in the pituitary membrane of the nose and frontal cavities; a subject to which we have frequently adverted in the progress of our work. *La Fosse's* opinion was subsequently taken up by some English writers, among whom will be found *Bartlet* and *Bracken*.

Among the older and subsequent French writers to *La Fosse*, on Glanders, some of whom were opposed to his opinion, we find the names of *Garsault*, *Malouin*, *Paulet*, *Chabert*, and *Gilbert*, and though they have made many remarks in some respects well applicable to the subject, on the whole they have left it unadvanced.

Nothing more of very great moment on the subject appeared until we arrive at the time of *M. Sainbel*, (1792,) a Frenchman, the founder of the Veterinary College, and its first and ablest teacher. He made a series of experiments on Glanders,

but they were not published until after his death, and although many valuable and just remarks are contained in the Essay, he never explained its true nature, or advanced any thing very important towards effecting a cure.

The opinions entertained on Glanders and Farcy by Mr. Coleman, M. Sainbel's successor, and the present Lecturer at the Veterinary College, have been freely noticed, in order, if possible, to correct the striking errors into which he has fallen, and in some degree to counteract their dissemination, by putting into the hands of the profession, the student, and the public, a work, which the author flatters himself will prove a satisfactory check to the too-prevailing influence which they have hitherto enjoyed. Soon after Mr. Coleman's accession to the College he was accused, by Mr. Lane in his vindication of the English Farriers, amongst other things, of teaching the opinion of Solleysel on Farcy; how far he was right in his assertion, and Mr. Blaine in a denial of its correctness, I leave the reader to decide.

Very few original writers on Glanders and Farcy have appeared among modern Veterinarians; the two most celebrated being Mr. Thomas Smith and M. Dupuy, to whose able labours I have had frequent occasion to revert, in my progress through this work; and although I occasionally differ on some points, especially with M. Dupuy, I

must in justice to them, admit that I have derived very considerable information from a careful perusal of their works, and have availed myself of various extracts. Mr. Thomas Smith published, in 1813, a treatise on Glanders, being at that time Veterinary Surgeon to the 2nd Dragoon Guards, wherein he allows that he found himself ultimately compelled to give up those preconceived opinions concerning the origin of Glanders, which he had for some time held; and as his work does not appear to have had much circulation among the profession or the public,—arising, I believe, from reasons similar to which have frequently operated as bars to the advancement of Veterinary Science,—I have introduced such extracts into my pages, as lead me to hope are calculated to do him both honour and justice; and with the view to show the extent of zeal he displayed on the occasion. The following is taken from his Preface, page 8, *et seq.*, and needs no further comment.

“Although I am sensible of the proposition I am to expect from those under the influence of a blind zeal for opinions taken upon trust; I nevertheless hope, that what I have to offer will be more favourably received by the unfettered and enlarged mind.

“That man, who subjects himself to be the dupe of a vulgar error, by whatever authority it may be sanctioned, or however extensively it may

prevail, without investigating the principles upon which it is founded, certainly acts unworthy of himself."

In some of the numerous editions and volumes of Mr. White's works the reader will find a few sensible remarks, both on Glanders and Farcy.

M. Dupuy, a French Veterinarian of some weight, and one of the Professors at the Royal Veterinary School at Alfort, published in 1817 a work on Tuberculous Affections, attempting to prove that *tubercles* were the *cause* of Glanders, a translation of which is given in Mr. Percivall's series of Lectures, Part III., published in 1826, and to which the reader will perceive frequent reference has been made in the course of this work. Since that period, however, there are many other very able French Veterinarians who have exercised their talents in investigating the nature of Glanders and Farcy.

About the year 1825, Mr. Sewell advertised his intention of publishing a work on Tuberculous disease, or Glanders, but as it has not yet made its appearance, at least that *I* am aware of, and as he is not remarkable for being communicative on any subject, I have not been able to learn immediately from him, what are *his particular notions* of Glanders; but as some of his remarks have long since appeared in print, relative to the subject, I shall introduce them here. "He (Mr. Sewell) could decide in the dark whether a horse affected with

Glanders was curable or not, and by the pulse alone. If it was forty-five in a minute, Mr. S. would say, that the subject had diseased lungs; he can also tell by the pulse whether the lung is hepatized or not. Another state of lung, besides hepatization, is the tuberculated. -Here is a specimen of the miliary tubercles. (*Showing a drawing.*) These little tubercles suppurate, and by coalescence form large abscesses, which discharge their contents through the bronchia: the horse is then considered as glandered, and destroyed. In the early stage, even of this condition of lung, Mr. S. has no doubt many would recover. This suppuration goes on to become very offensive and fetid. He has endeavoured to ascertain whether the matter taken from one of these tubercles would produce disease by inoculation: and he finds that by tuberculous matter he can as certainly produce tubercles, as one potatoe will produce another. Asses, inoculated with such matter, have had tubercles produced within their lungs in the space of five days; and he knows this for certain, because it is a very rare occurrence to meet with an ass with tuberculated lungs. Mr. S. believes the lungs to be the seat and origin of Glanders; and the affection of the nostrils to be secondary.* All that

* Mr. Sewell's Introductory Lecture. 1827. Published in the Veterinarian. Vol. I, page 41-2.

we are able to gather from this brilliant description of Glanders appears to be, that Mr. Sewell entertains similar notions respecting Glanders to M. Dupuy ; viz., that it is caused by tubercles. In fact, we have heard the late Mr. Ganly, Veterinary Surgeon to the 11th Light Dragoons, who had studied at Alfort, say, that he first communicated M. Dupuy's opinion on Glanders to Mr. S. and that he acknowledged it to be quite new, and received it as a correct theory.

The great deficiency of knowledge on this important subject must have been already too frequently and severely felt by the numerous classes of horse-owners, to render them not otherwise than anxious for the reception of any plan that might tend to check its dreadful ravages ; and I trust, after slight reflection on their individual losses, probably hundreds of pounds in the course of a year, that they will not withhold their patronage from any one who may throw fresh light on this hitherto little understood branch of Veterinary Science. The loss, indeed, which accrues to the country at large from the numbers which annually die is immense ; and the Cavalry horses, being continually liable to become affected, renders it a subject well worthy the attention of Government.

The Governors of the Veterinary College have of late years considered the treatment of Glanders of the highest importance ; and judging from what

I have repeatedly seen announced, and from their very liberal remunerations to Mr. Sewell, for the extra-exertion of his talents, in his attempts to elucidate the subject, no proof is wanting of the general interest it every where excites.

In France it appears the subject has engaged the consideration of the Senate itself, though hitherto with little avail, as a considerable number of horses still become affected and die every year. In White's Compendium of the Veterinary Art, (1825,) page 128, it is stated, that "In 1784, a law was enacted by the French Government to prevent any one from keeping a glandered horse, under a penalty of 500 livres." Every animal suspected of Glanders had the words "suspected animal," impressed in green wax on his forehead; and the penalty for selling such an animal, or offering him for sale, was 500 livres.

Persons having suspected animals were to report the same immediately to the mayor, syndics of villages, or other proper authorities, under a penalty of 500 livres. Such horses were then inspected by experienced veterinarians, or other competent judges, appointed by the mayor or other officer, and if found glandered, were destroyed. If only *suspected*, they were marked in the forehead as before described.

Among the notices to correspondents in the Sporting Magazine for August, 1828, the following

appears :—" In reply to a question from 'Phillippides,' as to the legality of destroying a glandered horse without the consent of the owner, we believe there is an obsolete statute to that effect in existence. But 'Phillippides' should recollect, that a discharge from a horse's nose is not always a proof of the glanders ; and that, consequently, the enforcement of the law might be attended with some risk and subsequent expense."

But on strict inquiry into the subject, we have not been able to find or hear of any Statute that relates to Glanders ; but as there is an express one in regard to horses with mange, and which we believe has never been repealed, it may possibly have given rise to the supposition of its being equally applicable to glanders, from the notion that they are both infectious. As we think with the celebrated Blackstone, that "it is incumbent upon every man to be acquainted with those laws, at least, with which he is immediately concerned," we shall offer an extract.

"No person or persons shall have, or put to pasture, any horse, gelding, or mare, *infect* with scab or mange, into or upon any forest, chase, moor, marsh, heath, common, waste ground, or common field, upon pain to forfeit for every horse, gelding, or mare, so infect, pasturing in any of the said grounds, ten shillings ; which offence shall be inquirable, and presentable before the steward

in every leet, as other common annoyances be ; and the forfeiture thereof to be to the lord of the same leet, where the offences shall be presented."

32 *Hen. VIII.*, c. 13, s. 9.

So long, frequent, and common has the occurrence of Glanders been in our own country, as from time to time to occupy considerable attention, and ages since it attracted the notice of the dramatist, for Shakspeare in his description of Petruccio's horse, thus alludes to,—“ His horse hipped with an old mothie saddle, the stirrups of no kindred : besides, *possessed with the glanders*, and like to mose in the chine ; troubled with the lampass, infected with the *fashions*, full of wind galls, sped with spavins, raied with the yellows, past cure of the fives, stark spoiled with the stag-gars, begnawn with the bots ; swayed in the back, and shoulder shotten ; ne'er legged before, and with a half-checked bit, and a head-stall of sheep's leather.”—*Taming the Shrew*, Act 3, Scene 2.

The great difficulty of explaining diseased appearances without the aid of plates, induced the author to give such as he conceived would convey to the reader a general idea of the subject ; but notwithstanding, it becomes highly necessary to bear in mind, that although the diseased nasal membrane is likened to “the sear and yellow leaf,” that it is only to be so understood in a general point of view, and that the same diseased

appearances, in different horses, and in the same animal at different times, varies so much as to baffle every effort to

“Catch, 'ere the change, the Cynthia of the minute.”

To convey, therefore, a correct idea of the successive changes which are liable to, and occasionally do occur, even in the same case, would require an indefinite number of plates, since single representations can only communicate a conception of one particular feature of the membrane. These observations are equally applicable to the appearances in Farcy, and to the various affections of the lungs.

A number of cases might have been easily introduced, had it been in contemplation to have formed a book of that description,—a practice at variance with the author's opinions; though it would, no doubt, have enabled him to swell the size of his volume, and to have completed his task with much greater facility. His aim, however, he trusts, is nobler, and one that he hopes will effect greater and more permanent benefits,—the inculcation of solid *principles* rather than visionary or speculative theories: and, as he trusts his work may possibly find its way into the hands of some of the numerous classes of horse-owners throughout the country, as well as into those of his professional brethren, he has studiously endeavoured to make it so plain

and popular as to render it generally intelligible. There will be found, however, an occasional repetition, which may render it necessary to state, that to effect the object the author had in view it became almost unavoidable; there will, however, be found as a compensation for this, no want of brevity, no unnecessary annotations, except such as the subjects introduced required in order to render them plain and intelligible.

The author may here be allowed to regret that there has not yet been published a Veterinary Nosology, by which the profession might be enabled the more briefly to comprehend diseases, and which cannot otherwise be so well described or understood; it was this deficiency that first led him into the necessity of adopting a popular form, and of writing this work in a corresponding style. This defect, however, he may announce will not be felt much longer, as he has lately set to work with a full determination of forming one, which he hopes very shortly to be enabled to present to the profession. He also takes this opportunity of stating, that it is his intention of publishing a series of Essays, on the nature and treatment of all the most important diseases of the horse, so as ultimately to form a new and entire system of veterinary practice.

I may, perhaps, be expected to assign some reasons for thus appearing before the public; and

probably one of the most satisfactory that I can offer will be—that the older and abler men, who possess any knowledge whatever respecting this matter, have hitherto allowed the subject to remain in an unadvanced and stationary condition. The favourable situation also which I have occupied at the Veterinary College for some years past, has afforded me so excellent an opportunity of investigating disease, that I could not but avail myself of the advantages of research which it opened to my acceptance, both public as well as private; and having carefully and cautiously formed my opinions, and compared them with those of other practitioners, I have thus been enabled to expose what has appeared to me erroneous and prejudicial, and to preserve that little which was of value or consideration; I therefore, with less mistrust, offer the opinions which I have formed on Glanders and Farcy to the profession and the public, and hope to continue to do so, as long as I shall meet with any thing new or worthy of their attention.

In conclusion: I hope I shall not be deemed to have been unjustly severe, or guilty of showing partiality or favour towards any individual. The opinions which I have advanced, and the conclusion to which I have arrived, I sincerely believe to be correct; and, from the unparalelled success that has crowned my humble but zealous en-

deavours to eradicate an affection at once so fatal and ruinous, I am led to hope that I shall not be exposed to the maliciousness of envy, or the severity of critical denunciation. Little practised “in the set phrase of speech,” errors of style may be many; but I trust the good sense and acknowledged generosity of the public will perceive counter-balancing advantages which may render any inadvertency of this kind comparatively insignificant. I can but acknowledge that I feel anxious for the result of my first effort to become of service in my profession,—as upon it must depend the course of my future labours and pursuits. Relying, however, with confidence on my system of treatment, I shall have the satisfaction of reflecting, that I have done *something* towards relieving and preserving the life of an animal, almost by nature the companion of man, and without doubt the noblest of creation.

Royal Veterinary College,

Oct. 1, 1830.

PART I.

CHAPTER I.

GENERAL OBSERVATIONS ON GLANDERS AND FARCY.

THE great difficulty which must ever occur in conveying clear and comprehensive ideas of such subjects as particularly require the aid of perception, from the mind of one person to another, through the medium of words, cannot perhaps be better exemplified than in the attempt to communicate to the reader a correct impression of those appearances of disease that take place in the horse, and which are commonly denominated Glanders and Farcy. This difference, it is apprehended, must be sufficiently obvious to every inquirer, but more especially to those who only may have heard or seen a descriptive account, and afterwards been enabled to contrast it with what they have actually seen and observed. To obviate this great difficulty, therefore, the author is induced to give such illustrative plates as he trusts will render the subjects on which he treats not only at once familiar to the eye, but equally, if not more, strongly impressive on the memory.

The various circumstances under which the appearances of disease in the horse, denominated Glanders and Farcy, so frequently occurs, has no doubt given rise to the different opinions which have been formed, and the almost endless confusion which has hitherto existed, respecting the nature and causes of these diseased appearances. But notwithstanding the great disparity of these opinions, several writers have noticed the fact of Glanders and Farcy following such diseases as Strangles, Common Colds, (Catarrh,) Grease, Injuries of different parts, &c. ; and amongst them are to be found Solleysel, Gibson, Taplin, and St. Bel. But they have fallen into great error by imagining that Glanders and Farcy is caused or produced by a poison contained in the blood, and that on the effects of this poison depends all the alteration in the structure or disease of those parts which are generally affected,—as the membrane lining the nostrils, the lungs, and skin. This is the doctrine now maintained and taught by Mr. Coleman, and that the mode of action is by its attacking such parts of the body as are most susceptible of its action, constituting Glanders when the membrane of the nose, or substance of the lungs is affected, and Farcy, when the skin and lymphatic vessels are diseased ; and I apprehend this is the most generally prevailing opinion even now amongst Veterinarians, Farriers.

and others; and it is this notion of a poison, it appears, that has given rise to Glanders being a *Specific disease*, and consequently to practitioners endeavouring to discover a medicine which would unite with the supposed *Specific poison* in the blood, to neutralize and destroy it by its *Specific effects*.

Having briefly stated the generally received opinions of Glanders and Farcy, it will be necessary for me now to give a short outline of my own ideas on these subjects, and the results of my observations on the nature and symptoms of Glanders and Farcy as they occur in the horse, and leave the *specific poison*, supposed to be contained in the blood, to be fully discussed hereafter.

All the symptoms of disease, which constitute Glanders and Farcy, invariably depend upon the unhealthy state of the system into which it is reduced or brought, and not, as is generally supposed, from a *Specific poison* contained in the blood. And these symptoms of disease are found to depend on, and arise from, a variety of causes, whether they occur at the latter states or stages of common healthy inflammatory diseases, which take place, either directly or indirectly, in different parts of the body, such as Strangles, Common Colds, Distemper, Inflammation of the Lungs, Grease, Dropsy, (Anasarca or Œdema,) Injuries,

&c., or whether they arise independently of such diseases. For when the system is brought into an unhealthy and a more or less debilitated state from neglect, or by the improper treatment of any of these diseases, and the following symptoms occur, they then constitute Glanders or Farcy. And as these symptoms only indicate the unhealthy state of the system when they follow such common Inflammatory diseases as we have just named, they may be regarded as ending in, or becoming Glanders or Farcy.

But nevertheless there are many instances where the symptoms which constitute Glanders and Farcy take place totally independent of common inflammatory and healthy diseases; but even then the symptoms likewise depend upon the unhealthy state which the system is in previous to, and at the time of their appearing or taking place; and consequently the system must ever be in an unhealthy state for the symptoms of Glanders or Farcy to show themselves.

Under this view of the subject, then, it must appear that Glanders and Farcy is nothing more nor less than terms indicating unhealthy disease of certain parts of the body, particularly those of the mucous membrane which lines the nose, the substance of the lungs, the skin, and the cellular membrane underneath.

Veterinarians and Farriers, from not having made a distinction between the healthy and unhealthy state of the system when inflammatory disease appears, or from being totally unacquainted with the fact, have been in confusion, and fallen into many errors respecting Glanders and Farcy. For some contend that the symptoms of disease in one horse indicates Glanders or Farcy, and others, that they do not; and consequently they have been obliged to make use of various auxiliary terms to express what they meant, such as *Suspected*, *bordering on*, or *approaching to*, Glanders or Farcy; words of little or no import beyond that of showing, that there are degrees of unhealthy appearances, and which appearances constitute the symptoms of disease.

Solleysel has stated that there are seven kinds of Farcy, and described the appearances of the ulcerated parts in each: M. M. Saunier and La Fosse treat of several sorts of Glanders, and Mr. Coleman divides Glanders into two kinds, the Chronic, when there is no ulceration of the mucous membrane which lines the nose, and Acute, when ulcers in that membrane are to be seen.

Now it appears to me, on minute investigation, that those persons who have been in any way concerned with the diseases of horses, have been in the constant practice of including all unhealthy

discharges from the nostrils,* whether the mucous membrane was ulcerated or not, under the general and sweeping term of Glanders; and hence the origin of such auxiliary terms and expressions as *Suspected, approaching to, or bordering on* Glanders. And they likewise appear to have included under the term Farcy, all those inflammatory enlargements of the extremities which take place in unhealthy animals, whether the lymphatic vessels were inflamed and enlarged or not, with ulcers appearing in the skin of the extremities; as well as those cases in which unhealthy ulcers are found in other parts of the skin, when the ulcers and discharge assume, or put on an unhealthy character and appearance; and hence has originated the terms of *suspected, approaching to, or bordering on*, Farcy; and as such auxiliary terms as these have got into general use, in conjunction with the words Glanders and Farcy, it will be necessary for me, in describing the symptoms of disease, to separate the healthy from the unhealthy, in order to make the subject better and more clearly understood; and this I shall now proceed to do.

In common inflammatory diseases, the system is

* Mr. B. Clark has, however, made use of the term, Nasal Farcy Gleets of Horses, but without defining the distinction between it and Glanders, or stating whether the membrane was at the same time ulcerated.

always in a more or less healthy state ; but on the contrary, when those symptoms of disease which constitute Glanders or Farcy occur, the system is always in a more or less unhealthy state ; and in proof of this I may advance, that the diseases of a common inflammatory nature, such as Strangles, Colds, Inflammation of the Lungs, Grease, Injuries, &c., from neglect or improper treatment, frequently degenerate into what is commonly termed Glanders or Farcy.

The diseases of every animal will, therefore, assume a character according to the state of the system ; that is, if the animal should happen to be in a healthy state when an inflammatory disease takes place, a healthy inflammatory action will be the result ; but if, on the contrary, the animal should be in an unhealthy state, then an unhealthy inflammatory disease will be the consequence ; and this is found to be one reason, amongst a multitude of others, why horses in large cities and crowded places, from the impure air which they breathe, are much more frequently affected with all the different symptoms of unhealthy inflammatory diseases which are included under the general and sweeping terms of Glanders and Farcy.

CHAPTER II.

THE APPEARANCES AND SYMPTOMS WHICH CONSTITUTE
WHAT IS TERMED GLANDERS AND FARCY.

THOSE diseased appearances which occur in the horse, and are usually denominated Glanders, are best distinguished by a discharge of *unhealthy* matter from one or both of the nostrils, varying in quantity ; and instead of flowing away freely, most commonly adheres to the edges of the nostrils ; at the same time presenting a sizzly or glue-like appearance, sometimes streaked or tinged with blood, and the extremities, or openings of the nostrils, are observed to be more contracted than is usually the case in the other diseases to which these parts are liable, such as Colds, Strangles, &c.

The mucous membrane lining the nostrils is the part from which the discharge takes place in Glanders, and, on inspection, this membrane will be found to be of a paler colour than when in a healthy and natural state, with a tawny hue, or yellowish tinge, and unhealthy in appearance,

“ Like the wan and sickly leaf of autumn.”

And in some instances this characteristic appearance is quite dark, and nearly approaches to a copper colour. Ulcers are also sometimes formed in this membrane, which gradually enlarge, and

these likewise appear of the same unhealthy nature as the membrane.

Frequently one, and occasionally both, of the Sub-maxillary lymphatic glands,* which are situated between the lower or posterior jaw, will be found to be more or less enlarged, and tender from inflammation : but they are only slightly affected in some instances ; and as the symptoms of the disease advance, these glands become less sensible to the touch, more indurated or thickened, and ultimately take on a hardened or schirrous character.

The animal is generally more or less off his stomach, appearing languid and weak, and altogether out of condition, with a rough and unkindly coat ; and as the symptoms of the disease increase or proceed, the appetite becomes still more diminished, and the system weaker ; profuse sweating comes on from slight exertion, the membrane and discharge from the nostrils become more unhealthy, the ulceration extends, and in such cases as have hitherto been without ulcers at this period or stage of the disease, most generally exhibit them. But it is necessary to bear in mind, that there are some cases where ulcers exist in the membrane, as well as some in which they do not, where the appetite is tolerably good, and the animal capable of under-

* Vulgarly called Kernels.

going moderate exertion, by performing a certain quantity of labour ; and this state may continue for some time where care is taken ; but these cases when neglected, ultimately exhibit similar symptoms to those already stated.

There are some cases of Glanders where abscesses and unhealthy ulcers form in the skin of various parts of the body, and which discharge matter of an unhealthy and infectious nature ; and this, when introduced into the system of some animals by inoculation, will produce similar effects as the discharge from the nostrils would, if taken from the same animal ; and in such cases as these, the animal is then considered to have both Glanders and Farcy.

It occasionally happens, that when Farcy follows Glanders, that a considerable enlargement and swelling of one or more of the extremities takes place, and, in some cases, conjointly with enlarged and inflamed lymphatic vessels ; whilst in others, these vessels may be diseased without any great enlargement of the extremities.

The symptoms of Farcy sometimes precede those of Glanders ; and in other cases, those of Glanders come on before Farcy appearances : and again, a horse may show symptoms which indicate Glanders without any of those which belong to Farcy.

If an unhealthy discharge takes place from the

membrane lining the nostrils, when a horse is affected with Farcy, by no means an unfrequent occurrence, then the discharge, from its unhealthy and infectious character, will constitute Glanders.

The animal's appetite, strength, and general condition, commonly varies in Farcy much the same as it does in Glanders; and the mucous membrane of the nostrils, both in Farcy and Glanders, will be found to appear of a more or less unhealthy nature, and of a pale, yellowish cast, indicating *an unhealthy state of the whole system.*

A cough is sometimes a symptom both of Glanders and Farcy, and occasionally it indicates disease of the lungs; a state in which they are in some instances found on examination after death; but there are cases, both of Glanders and Farcy, where no alteration or disorganization of these parts, or any disease of the lungs, are to be found, when the only unnatural appearances to be observed are, that these parts, together with all others of the body, are much whiter in colour, and weaker in texture, than is usually found to be the case in those animals which are destroyed when in a perfect state of health.

CHAPTER III.

PRELIMINARY REMARKS ON GLANDERS AND FARCY AS THE RESULT OF COMMON INFLAMMATORY DISEASES, VIZ., TRUE AND FALSE STRANGLES, COMMON COLDS, (CATARRH,) DISTEMPER, (EPIZOOTIC, GENERALLY TERMED EPIDEMIC DISEASE) INFLAMMATION OF THE LUNGS, &c.

GLANDERS and Farcy have hitherto been most commonly described and treated as distinct and separate diseases, whereas they are, if properly considered, only the unhealthy, and, not unfrequently, the latter stages of common inflammatory diseases of certain parts of the body, generally of the mucous membrane of the nostrils, cellular texture, or substance of the lungs, the skin, or the connecting cellular membrane underneath; and the inflammatory diseases which Glanders and Farcy most frequently follow, are those termed Strangles, *true* and *false*, Common Colds, Distemper, Acute and Sub-Acute Inflammation of the lungs, general or local Dropsy, (Anasarca or Œdema,) and the latter, whether it occurs from general, or local debility, conjointly with Grease, or Injuries of different parts of the body or not; as, for instance, when a horse has been for a time labouring under one or other of these common inflammatory diseases, from

the effect of which, or by improper treatment, the system has been brought into an unhealthy state.

When such changes as these take place, and the discharge and ulcerations become unhealthy, the disease with which the animal was before afflicted is now altered from its original character, and, under these circumstances, the animal is usually considered to have become *Glandered* or *Farcied*.

Glanders and Farcy not only follow such diseases as have been just mentioned, but also appear sometimes in unhealthy and debilitated animals from over-exertion and other causes, and without being preceded by any of the former named diseases of a common inflammatory character; and this is occasioned by the system being reduced to an unhealthy state from the same causes as those which, in more healthy and vigorous animals, would be found to produce Strangles, Common Colds, Inflammation of the lungs, &c.

I shall now proceed to explain, as clearly as I am able, the symptoms and diseased appearances which take place in Glanders and Farcy, the causes, and circumstance under which they occur, pointing out at the same time such cases as are remediable, with the most rational mode of cure; commencing with Glanders and Farcy, as following the *true* and *false* Strangles.

CHAPTER IV.

NATURE AND SYMPTOMS, PROGRESS AND TERMINATION,
OF TRUE AND FALSE STRANGLES, ENDING IN, OR FOL-
LOWED BY, GLANDERS OR FARCY.

BOTH the true and false form of Strangles, like Common Colds, consist of a greater or less degree of inflammation of the mucous membrane that lines the upper part of the throat, (or larynx,) wind-pipe, (or trachea,) and bronchial tubes; and in some cases the cellular texture, or substance of the lungs, participates in the inflammation.

At the commencement of Strangles there is generally a cough, with considerable soreness of the throat, and a difficulty in swallowing; and in the act of doing so, or in the attempt to swallow, there is sometimes a convulsive wheezing brought on, which is followed by a copious discharge of saliva and mucus from the throat and mouth; and after coughing, a discharge of matter is very often produced from both nostrils of a white or yellowish colour.

In addition to these symptoms, there is an external enlargement, with considerable swelling and tenderness, of the skin and cellular membrane of the throat, and particularly in that part which covers the Parotid and Sub-maxillary salivary

glands,* as well as in the glands themselves. Sometimes abscesses form in these parts; and during the progress to suppuration, and previous to the matter being discharged, the swelling and enlargement is so great as occasionally to compress the passages leading to the lungs, and by preventing the air passing through the upper part of the wind-pipe (or larynx) in some instances it is necessary to perform tracheotomy, by making an opening in the middle of the wind-pipe, and introducing a proper tube, in order to prevent the animal from being suffocated. The Sub-maxillary lymphatic glands, the skin, and cellular membrane which surrounds and covers them, also partake more or less of the swelling and enlargement, inflammation and tenderness; and these glands, when the animal is treated in a judicious manner, and particularly in cases where the constitution is strong, gradually enlarge and suppurate, and if not artificially opened, ultimately discharge a more or less quantity of thick, white, and healthy matter. But quite the reverse of this is the case when the true form of Strangles degenerates into the false; a frequent occurrence, when the system has been reduced by large and repeated blood-lettings, strong physic, or diuretic medicines; for,

* Situated a little below the ears, and rather inside the broad part of the lower jaw.

by such treatment, the suppurative process of the glands is suddenly checked, and in consequence they become hard or schirrous. But there are instances where they proceed to supuration very slowly, and with great difficulty, and the matter formed is then much less in quantity, and of a more or less unhealthy character than in the true and regular form of Strangles, when violent remedies have not been used. The pulse in Strangles is commonly increased, and in some cases the respiration also; the eyes appear dull and languid, the head is thrust forward with a reluctance to eat, and, in some cases, the animal appears to have a great desire to drink; but from the tenderness of the throat, and difficulty in swallowing, after a gulp or two, stops, and is unable to quench his thirst, yet very reluctant to part with the water, which he evidently craves; and in such cases, from the soreness, and difficulty in swallowing the water when taken into the mouth, instead of passing down the throat, is frequently returned, and escapes by the nostrils. On some occasions it happens that the inflammation extends to the lungs; and in such cases as these, there is a greater increase of the pulse and respiration; and in cases of this sort it will be necessary to keep the animal cool, and take away a moderate portion of blood. The extremities are sometimes found

slightly enlarged and swollen, and the appetite bad, with a great degree of languor and reluctance to move.

It is also necessary to state, that the false form of Strangles occasionally occurs independent of the true form, and without following it; but this only takes place in those animals where the system is too weak to exhibit the symptoms which constitute the true form.

SECTION I.

Difference between the True and False form of Strangles.

The pulse in the true or regular form of this disease is always fuller and stronger than in the false or suppressed Strangles, and the mucous membrane of the nostrils redder, with a more healthy appearance, and it discharges a greater quantity of healthy matter. The membrane of the nose is also less liable to be ulcerated, and if ulcers are present, they assume a more healthy appearance, and quickly heal, and are not so liable to degenerate into Glanders as the false or irregular Strangles.

In the true form of Strangles there is very

rarely ulceration of the nasal membrane, and this true form seldom degenerates into Glanders, unless in very badly managed cases: while on the other hand, in false Strangles, followed by Glanders, ulceration is not uncommon.

The false form of Strangles never becomes the true; but the true, by bad management, or from other causes, very frequently degenerates into the false or irregular form; and by continued bad treatment, causes an unhealthy state of the body, which ultimately terminates in what is termed Glanders.

Solleysel was well aware that the false or irregular form of Strangles when neglected, run into Glanders, for, in treating on Strangles, he states as follows: "When there is only an imperfect evacuation of humour, the horse is frequently troubled with *False Strangles* at the age of Six, Ten, or Twelve years; which being neglected, degenerates to the Glanders."* And he also appears to have been fully aware of the true form of Strangles ending in Glanders, for, in the

* See the "Complete Horseman, by the *Sieur de Solleysel*, Quarry to the French King for his Great Horses, and one of the Royal Academy at Paris, made into English from the eighth edition of the original. By SIR WILLIAM HOPE, Kt., Deputy-Lieutenant of the Castle of *Edinburgh*. The Second Edition, 1717, corrected from many Errors in the former Edition." Part II, Chap. IX, Sect. 1, p. 15.

next page, he states, "But horses that are used to dry food must not be turned out to grass, which would cool 'em too much, and perhaps turn the *Strangles* to the *Glanders*." And, further, that critical writer Taplin, in his concluding observations on Strangles, likewise makes the following statement: "It is necessary to be remarked, and well remembered, that the disease we now treat of, by neglect and inattention, sometimes degenerates to a confirmed GLANDERS."*

Solleysel also appears to have been fully acquainted with the difficulty and danger which occurs in the false or irregular form of Strangles, for on this point he observes, in treating *On the False or Bastard Strangles*, "This Distemper makes the Horses a great deal more sick than the true *Strangles*, and sometimes they die for want of due Assistance, or the Disease generates to the *Glanders*; and, therefore, great care must be taken to keep 'em warm, and to administer effectual Remedies."†

* The Gentleman's Stable Directory, or Modern System of Farriery, by William Taplin, 10th Edition, page 286.

† Solleysel, Part II, Chap. X, Section 1, page 21.

SECTION II.

Nature of the True and False forms of Strangles.

The Strangles in the horse have been compared by several old writers, as well as many of the moderns, to the small-pox, measles, &c., in the human subject; and it appears to be in consequence of the disease only taking place once during the life of the animal, under the true form, and that mostly between one and five, or six years old. But this is by no means a constant rule; for though horses, generally speaking, have the disease only once, there are many instances where the Strangles occur under the true, or regular form, a second time, during the above named periods. The false form of Strangles may take place in the early, as well as the advanced stages, both in such animals as have, or have not undergone the disease in the true form.

Some persons contend, and amongst this class is Mr. Coleman, that Strangles is caused by *an animal poison* taken into the blood, and circulated with it, from breathing the impure and contaminated air of Stables. Solleysel, in the chapter, wherein he treats on Strangles, states, that “there are various opinions concerning the cause of this Distemper: For some look for its Original in the Mares’

womb, from whence, (they think) the Foal brings the Seed of it, which some years after, when the natural Heat is considerably augmented, break forth, and agitate the Humours, which by degrees are discharged on some part of the Body, where they usually come to Suppuration. Others are of opinion, that the change of Nourishment, that is, of Milk to more solid Food, makes a notable Alteration in the Body, both in the Humours, and in the Parts that are nourished by 'em, which is followed by Fermentation, that obliges Nature to make an Attempt to expel the Remainders of the first Distemper.”*

GIBSON gives as the causes of Strangles, change of diet, alteration of air and exercise, with some others, as by taking cold, shedding or changing the teeth, or whatever may induce pain, or bring a flux of humours at any critical time upon the Throat and Jaws.

TAPLIN considered Strangles to have arisen from an accumulation of impurities in the body, imbibed with the food.

WHITE asserts, that the Strangles is a disease of the throat, consisting of an inflammation of the tonsils, and terminating in an abscess under the Jaws.

BLAINE, one of the latest writers who has given

* Solleysel, Part II, Chap. X, Sect. 1, p. 15.

his own opinion on the subject, states, "It may be characterised as a catarrhal affection, accompanied with a specific phlegmonous inflammation of the cellular substance, in and around the parotid and sub-maxillary glands, tending in most instances to abscess."

The last opinion which I shall notice on the subject of Strangles, is one that deserves very particular attention, it is that of M. Rodet, Jun., one of the Professors at the Royal Veterinary School at Alfort, and which I shall copy as it appears in the Farrier and Naturalists' Journal for July, 1828, p. 330, there given as a translation from the *Jour. Prat. Med. Vet.*, and taken from his Essay "On the Treatment of Strangles in Horses, by the Antiphlogistic Plan, addressed to the Medical Society of Emulation of Paris." M. Rodet being one of the corresponding Members, his Memoir is most interesting; as it treats, in a new manner, a subject on which much has been written, but which has not been well understood; although he has made a grand step in this department of Veterinary Pathology.

"According to a popular author, the Strangles 'consists in a poison of an uncertain quality, which circulates in the blood, until nature makes an effort to throw it off, and it settles on a part, which is usually the nose or under jaw.'

"If the poison be not expelled, that is, if the

horse does not have the Strangles, he is generally considered in great danger ; and this opinion is even maintained by many persons in the profession.

“ M. Rodet, dissatisfied with this vague account, has made experiments which throw great light upon the subject, and has proved the absurdity of the vulgar opinion. He considers the Strangles as an inflammation of the throat, which differs in no respect from many other affections of these parts known under different names.

“ This author, who admits nothing which experience has not sanctioned, meets the advocates of the innate cause of Strangles with the following fact, which refutes them completely :—

“ The horses of warm countries, such as Arabia, the coast of Africa, Spain, and even Italy, never have Strangles,—a disease known only in the middle and northern parts of Europe. Now, have we not a right to ask, by what privilege the horses of the South are preserved from Strangles, if this affection were solely to be attributed to the existence of a particular poison ? And also, why Barbary horses (we cite them as an example) are less sickly and more vigorous than those of our own country, as they do not go through that purification—that cleansing which is here considered so indispensable to the health of our horses ?

“ The inflammation called Strangles, cannot be attributed to an innate poison which circulates in

the blood from the birth of the animal; and it is not the effect of any single cause, it is referable, according to M. Rodet—

“1st, To the disturbance of second dentition, which takes place between the ages of three and five, and is sufficiently painful to cause an increased action, more or less, of all the neighbouring parts.

“2dly, To the castration of males.

“3dly, To the changes in diet and situation which young horses undergo.

“4thly, To the unusual fatigue which they undergo in training;—all circumstances which happen about that period, and which add more or less, to the activity of the first and principal cause.

“The fact before mentioned on the subject of Southern horses, still comes in support of this opinion: they are free from the Strangles when not castrated, and left in their native country: but they lose this advantage if they are castrated, and taken young into cold and humid climates, where we find them placed under the influence of the above causes. They do not carry with them the germ of the complaint, but they acquire it in the country, to which they are taken.

“The errors in the treatment of Strangles have chiefly attracted the attention of M. Rodet. In consequence of the opinion that the Strangles, being a poison generated with the animal, is an indispensable complaint,—a crisis which is ne-

cessary to take place,—it is generally believed that we ought to assist it as much as possible ; above all, to be careful of checking it by bleeding, which, however, is the best means of cure.

“ It is a great satisfaction to many people, when a horse with the Strangles has discharged well ; it is a guarantee for his future health—the more goes out, the less remains, they think. This reasoning, which appears singular to physiologists, is, however, without any exaggeration, that of many persons who are not devoid of knowledge ; but who, upon this particular subject, reason wrongly. Every day we hear amateurs and officers of cavalry complaining to dealers that they stop the Strangles on their horses by bleeding them when it shows itself ; and attribute all the complaint which may afterwards occur to the Strangles repelled, or badly thrown out.

“ M. Rodet has not admitted any of these evidently erroneous opinions : he treats the Strangles by the antiphlogistic plan, in which bleeding is a principal agent, by powerful counter-irritation, (setons, blisters, &c.) The success which he has met with in this rational plan has been very great, as may be seen in his Essay, which contains the history of twenty-two cases treated on this plan, twenty of which were successful ; to the other two he was called too late, and in them he remarked a

complication of symptoms. The author inquires, upon what this generally-received opinion is founded—that stopping the Strangles, and the non-expulsion of the supposed virus, can have injurious effects? He observes, that the dealers who have horses on the point of showing the Strangles, disperse the first symptoms of it by repeated bleedings, which check the inflammation; but they do not follow up the bleeding by any additional means to render its effect durable; and, besides, they continue to keep the animals under the influence of the causes which first produced it. It results, that inflammation, imperfectly treated, recurs again after a time, and gives rise to diseases of more or less importance, which ought to be attributed to this bad treatment, and not to the bleeding; which is good, and the most useful remedy in our power.

“M. Rodet concludes, from the observations contained in his Essay,—

“1st, That the Strangles, far from being an affection *sui generis*, is truly an inflammation of the mucous membrane of the mouth, nostrils, larynx, trachea, &c. : it may extend, by continuity or sympathy, to the tissues which that membrane invests, to the glands, the lungs, and even to the stomach.

“2ndly, That bleeding, aided by other anti-

phlogistic means, to which is joined the use of the most active counter-irritants, constitutes the proper treatment of Strangles.

“3rdly, That bleeding, employed without the auxiliaries in question, may certainly have the bad consequences which have been attributed to it by ignorant people.”

I can readily coincide, in part, with some of these writers on the nature of Strangles, and particularly with M. Rodet, but I cannot by any means reconcile myself to his mode of treatment in general, or agree with him on every point of treatment, especially in that of copious and frequent blood-letting, with a view of preventing suppuration taking place.

In the statement which is made, that, “every day we hear amateurs and officers of Cavalry complaining to dealers, that they stop the Strangles in their horses by bleeding them when it shows itself, and attribute all the complaints which may afterwards occur to the Strangles repelled or badly thrown out.” Now I am fully aware that this is a very generally received opinion in England, as well as in France, and I have not the least doubt but this doctrine is founded on fact; and though officers and other persons may be mistaken in regard to the nature and causes of diseases, they may most certainly be allowed to judge from facts and the effects which they see follow from the treatment of Strangles or other diseases.

The Strangles, more particularly in some animals, where the system is in a vigorous and healthy state when the inflammatory symptoms run high, with a full and strong pulse and a considerably increased respiration, are such cases only as admit of moderate blood-letting, and occasionally to be repeated, then this plan may be found of great benefit; but when, on the contrary, the system is weak, then bleeding and reducing the animal will be followed by the worst of consequences; in short, large or repeated bleedings, with a view to prevent suppuration, will have the effect of checking the animal's growth when young, and, in many instances, from the direct debility which it produces on the slightest exciting cause being applied, although the animal has apparently recovered, will be more liable to take on any future disease of the following parts, as the mucous membranes, substance of the lungs, skin, &c.; and any of these affections may, directly or indirectly, end in Glanders or Farcy: and similar effects may also be produced by an injudicious use of strong and repeated physic and diuretic medicines, and other debilitating remedies. This is by far most frequently the case when the Strangles occur in a suppressed form; and in such cases, instead of reducing the system too much, gentle tonics ought rather to be given, such as Gentian in combination with Ginger, &c., to rouse and increase the system,

and cause the suppurative process to take place. Horses, while labouring under the true form of Strangles, are very frequently brought into the false or suppressed form, and this is also in consequence of the same injudicious modes of treatment, such as copious blood-lettings, purging, and diuretic medicines, &c.; and the false, as already stated, frequently degenerates into Glanders or Farcy.

The false form of Strangles is most frequently found to take place in those horses which are much exposed to wet and cold, or are badly fed,—as horses at Straw-yards, &c. or by continually breathing impure air; and likewise, in those cases where the system has been reduced to a more or less debilitated state, by the injurious application of a variety of predisposing and exciting causes, such as before stated. While, on the contrary, the true form of Strangles, most frequently occurs in animals in a better state of condition, stronger and well-fed, and in which the system is in a more predisposed state to take on acute inflammation than it is in the false. The false form of Strangles, as it is termed, therefore requires the system, in most cases, to be moderately supported; but the true form, may, in some instances, require the system to be reduced in a moderate degree by bleeding, &c., but it ought not to be carried so far as to prevent suppuration taking place.

SECTION III.

Symptoms and Progress of Glanders and Farcy, occurring after or following the Strangles.

The symptoms which present themselves to notice when the Strangles terminates in Glanders, are the following,—the discharge from the nostrils may be observed to have lost its white and healthy colour; to be considerably less in quantity and of a thinner consistence; and of a darker coloured, unhealthy, sizzly, or glue-like appearance; and instead of flowing freely from the nostrils, as heretofore, adheres closely round the exterior openings, or edges of the nostrils. But these are not the only changes that have taken place in the discharge; for it now becomes of a more unhealthy and infectious character, capable of producing, in some horses, and nearly every ass, a similar disease, by inoculation of the parts about the nostrils, and ultimately, in some, death. The discharge, instead of coming away equally from each nostril as heretofore, in some cases now becomes confined to one only, and more particularly to that side in which the lymphatic gland is most diseased: but in many cases the discharge is about equal from both nostrils. The extremities of the nostrils become more closed and contracted, and on examining the membrane

lining the nostrils, it will be found to have changed the red and healthy appearance and assumed a more or less unhealthy one, of a pale yellowish colour, occasionally darker, and inclining towards a copper colour, indicating an unhealthy appearance ; and in such cases, where ulceration existed previous to this state of the membrane occurring, the ulcers will be found to have changed from a red and healthy state, and to have taken on a similarly unhealthy one. In cases of Glanders following Strangles, when there is no ulceration of the membrane lining the nostrils present, but, after the symptoms of Glanders have appeared, either for a long or short time, an unhealthy ulceration of these parts are found to occur : the former state of the membrane, that is, without ulceration, is designated by Mr. Coleman, the Chronic Glanders, while the latter state, when ulceration takes place, he terms the Acute form of the disease ; and he has also adopted the same terms, under whatever circumstances Glanders appear. The suppuration and discharge of matter from the sub-maxillary lymphatic glands, in cases where Glanders occur after suppuration of these parts have taken place, will be found to be considerably less in quantity, thinner in consistence, darker in colour, and of a much more unhealthy hue than before ; and in cases of false Strangles, where these glands are tending towards a state of suppuration previous to

Glanders occurring, as soon as the symptoms of Glanders appear, the suppurative process of these glands suddenly diminish or wholly cease, and they soon become considerably harder and quite schirrous, and the membrane of the nostrils will be found to assume the same unhealthy appearance as we have before described.

In some of the cases of Glanders which follow the Strangles, or shortly after the symptoms appear, small tumors are sometimes to be observed on the sides of the face, in other cases on the neck, and occasionally also, on one or more of the extremities or other parts of the body: these tumors proceed to suppuration, and ultimately form unhealthy abscesses and ulcers in the parts, and the matter or discharge from them will be found of a thin and unhealthy consistence, of the same infectious character, and capable of producing similar effects on being introduced into the system of other animals by inoculation, as the discharge taken from the nostrils would do in the same disease, and whenever this is observed to be the case the animal is then considered to be Glandered and Farciéd.

CHAPTER V.

NATURE AND SYMPTOMS, PROGRESS AND TERMINATION,
OF COMMON COLD, (CATARRH,) DISTEMPER, (EPIZOOTIC
DISEASE, &c.,) ENDING IN, OR FOLLOWED BY, GLANDERS
AND FARCY.

THE leading symptoms of Common Cold, (Catarrh,) at the commencement and during the progress of the disease, are not so acute as those in Strangles; the membrane of the nostrils is not found to be so red or inflamed, the sub-maxillary lymphatic glands are not very frequently enlarged, and, when they are affected, the inflammation and enlargement is in a less degree, generally subsides sooner, and does not proceed to suppuration, as in the Strangles. The soreness of the throat and difficulty in swallowing is also, in general, much less, and, in many cases, not to be observed. But some cases of Common Colds are met with, where the tenderness of the throat and the difficulty of swallowing, is nearly equal to the same symptoms in Strangles.

The Parotid glands are sometimes slightly enlarged, and the skin and cellular membrane round the throat inflamed, and occasionally abscesses form, but not to the same extent as in the Strangles.

The inflammatory state of the system, and the

increased state of the circulation and respiration, is not, in general, very violent in Common Colds; and the animal is capable of undergoing moderate exertion without much inconvenience, at the commencement of the disease; although, in most instances, the appetite is more or less impaired: while in Strangles we mostly find the circulation increased, with other inflammatory symptoms—hot mouth, loss of appetite, and the animal incapable of undergoing any considerable exertion; though this circumstance is sometimes the case in Common Colds, but not so frequent by far as in Strangles.

There are cases where inflammation of the membrane of the nostrils extends down the wind-pipe, (trachea,) to the bronchial tubes, as in Strangles, and in which the pulse and respiration is found to be considerably increased, with coldness of the extremities; and if those cases are neglected, or improperly treated, they may end in a chronic disease of the lungs, or death, or directly or ultimately run into Glanders or Farcy.

In the greater number of cases of Common Colds, the animal looses his strength and appetite, and if there be much disease present, and the animal is taken to work, he sweats and quickly loses his condition. In some instances there is a cough, and in all cases a discharge from the nostrils, which is commonly white and healthy, and less in quantity than in the Strangles: at the

same time coming away more freely, and without adhering to the edges of the nostrils as in Glanders.

The symptoms of Common Cold are liable to take place at all periods of the animal's life, and at all seasons of the year, though, in many instances, without much inconvenience.

SECTION I.

Symptoms of Common Cold, (Catarrh,) as appearing under an Epizootic form, and ending in Glanders or Farcy.

Having given a brief description of Common Cold, (Catarrh,) as it is liable to occur at all times and seasons of the year, I shall now describe the disease as it appears under an Epizootic* or general form, for when it thus occurs it is of a more dangerous character, and requires a more careful mode of treatment than when only in the common or simple form.

* From the Greek words, *Epi*, upon, *zoon*, an animal; a very appropriate term, as being applicable to all animals. The word, Epidemic, being from the Greek of *Epi*, upon, *demos*, the people, consequently ought not to be used in diseases of animals, though very frequently so applied. With the French Veterinarians, the word Epizootic, appears to be in general use.

This description of cold most frequently occurs when the weather is changeable, particularly in the spring and autumn months, and from being prevalent in some seasons more than others; it has in consequence been considered to be a contagious disease, *viz.*, capable of being communicated from one animal to another by the actual contact of the matter which is discharged from the nostrils; while others have considered this form of cold to be of an infectious nature, *viz.*, capable of being communicated from one animal to another through the medium of the breath, or air expired from the lungs; and these opinions are, I apprehend, still entertained by many modern Veterinarians: but the most probable cause of this disease appears, to me, to be the sudden changes and variable state of the atmosphere, as from dry to wet, and from hot to cold; and it also appears to be produced by a long continued easterly wind, or these causes in combination; and, when this form of disease is prevalent, nearly all domesticated animals are liable to be affected, whether confined or exposed to the atmosphere. Various terms have, in consequence, been applied to it; when it occurs amongst horses, it is called Distemper, Influenza, Contagious Catarrh, Catarrhal Fever, Epidemic Catarrh, Epidemic and Epizootic disease, &c.; and when it appears in Cattle, it has been

designated by the name of Quarter Evil, or Ill, Blood Striking, Black Quarter, Joint Felon, &c.

This form of disease is similar in character to common Cold, (Catarrh,) as far as regards the discharge from the nostrils, state of the mucous membrane, submaxillary lymphatic and parotid glands ; as also the inflammation of the surrounding cellular membrane and soreness of the throat ; but the symptoms are always more complicated and dangerous than in Common Colds.

There is also greater dulness and general debility, with a want of appetite, and more or less of a dropsical swelling of the extremities ; (Anasarca ;) but this symptom is not so frequent in Common Colds. The pulse and circulation is also more increased, the body bound, and the animal less able to undergo exertion as in the common form of the disease.

When this disease appears in the Epizootic form, it varies in character according to the season in which it occurs ; as in the spring months the system of all animals is stronger and more active than at any other period of the year, this disease, therefore, requires a more active mode of treatment than when it takes place in the autumn. It occurs in some seasons more frequently than in others, which I consider chiefly arises from the variable state of the atmosphere. Different kinds of animals at all ages are liable to be affected, and none more so,

perhaps, than the horses confined in large cities, as well as those which have been lately brought fresh from the country, and are suddenly subjected to a different kind of stable treatment.

When the disease assumes the Epizootic form, it is found more frequently to terminate in Glanders alone, or in conjunction with Farcy, than when in a milder or the more simple form of Common Cold; and this, in a great measure, accounts for our having Glanders and Farcy much more prevalent in some seasons than in others.

SECTION II.

Symptoms of Distemper, or Epizootic Disease.

The first symptoms of this disease are, usually, loss of appetite, a quick pulse, and, in some cases, a shivering fit, attended with a greater or less degree of inflammation of the whole system; the eye-lids appear swollen, the lining membrane, or conjunctiva, is found to be inflamed, and the transparant part of the eye, or cornea, to have lost its brilliancy. The discharge from the nostrils soon looses its natural appearance, and assumes that of a thick, and healthy matter, or pus, and the mucous membrane of the nostrils, at the commencement of the disease, becomes

redder in colour and more or less inflamed ; there is also general debility, sore throat, and difficulty in swallowing ; an enlargement of the parotid, and, in some cases, of one or both of the sub-maxillary lymphatic glands : there is also, sometimes, a cough ; and from the soreness of the throat and upper part of the wind-pipe, the food and water, when attempted to be swallowed, is forced back again through the nostrils.

In some instances, as in Common Colds, the inflammation extends down the membrane lining the wind-pipe, (trachea,) and ultimately terminates in Acute or Chronic inflammation of the lungs ; while, in others, the inflammation is wholly confined to the membrane lining the nostrils and cavities of the head, and without extending to the lungs : and there is also, in most cases, swelling of the extremities, (Œdema,) in a greater or less degree.

The character of this disease varies according to the season of the year, as well as the state and condition in which the animal is placed, at the time of being attacked. In the autumn and winter months, in the generality of cases, the pulse is quick and weak ; the most cautious treatment is therefore rendered necessary ; for if active measures are resorted to, such as large and repeated *blood-lettings*, *rowels*, strong *physic*, and *diuretic medicines*, &c., the whole system of the animal necessarily becomes greatly debilitated ; the healthy suppuration,

or discharge from the nostrils, will very soon partially or wholly cease ; the extremities will become considerably more enlarged and dropsical, and the animal, consequently, either dies, or remains in a low and weak state, or ultimately becomes Glandered and Farcied. This particularly applies to horses in large towns and confined situations.

In the spring and summer, the Distemper, or Epizootic disease, is found to assume a more active character than in the winter and autumn months, and the pulse, although quick, is at the same time much fuller and stronger than at any other season of the year ; but this depends on the system being much stronger and more vigorous than in the autumn and winter months.

This disease, therefore, in the spring and summer months requires, and the system will bear, a more active mode of treatment in the form of depletive measures, as blood-letting, &c. ; but notwithstanding this, they require to be used with the greatest caution ; for if abused, the same results will follow as in those cases already stated, which occur in the autumn and winter, and which generally produce irrecoverable direct debility in the system, in some cases death, and in others Glanders and Farcy.

SECTION III.

Bad effects which follow Distemper Injudiciously treated.

From the real nature and proper treatment of this disease not being understood, the number of horses which have fallen sacrifices to its influence is almost beyond conception. Dealers, Stage masters, Coal merchants, and Brewers, have been known, in some instances, to have lost nearly one half, if not a third of their horses, partly from the causes which produce the disease, as the sudden and variable state of the atmosphere, and partly from improper treatment; and I have seen and examined a great number brought to the slaughter houses, after death, where every part of the interior of the body was in a perfectly healthy state, the only diseased appearance being a little redness or inflammation of the membrane of the nostrils, and the upper part of the windpipe, (trachea.) In some few instances, however, the substance of the lungs has appeared slightly inflamed, while in others the principal diseased appearance presented, was a slight inflammation of the inner coat, or what is termed the mucous membrane of the intestines, evidently arising from the effects of the injurious use of powerful drastic purgative medicines.

Now in a great many such cases, a question has arisen, What has been the cause of the animal's death? It has been asserted, that inflammation could not have been the cause, for, in most of the cases I examined, there was little or no inflammation present. It has also been advanced, that the want of bleeding could not have been the cause, for that he was both bled, and well physiced, and that every thing had been done which could tend to save his life.

But if we inquire minutely into this disease, and ask whether the generality of cases require so active a mode of treatment, I must certainly say, they do not; being a disease which, in my opinion, requires a treatment rather the reverse; and, in the greatest number of cases, moderate blood lettings, according to the age, size, strength, and condition of the animal, with a daily administration of alterative medicines, such as will have the effect of gradually restoring the action of the bowels and kidneys, without producing a decided violent purgative, or diuretic effect, is the plan to be adopted; but as soon as either of these become evident, the medicine ought to be discontinued for a time, and then, if necessary, commenced again, and continued until the animal begins to recover, indicated by the pulse becoming less frequent and stronger, and by the animal's gradually recovering his appetite.

During the treatment of Distemper, it is ne-

cessary to keep the animal in a large box, without exercise, and, in the summer, let the temperature be kept as cool as possible, cautiously avoiding a direct current of air. But at the commencement of the disease, and until the animal begins to recover, the diet should be nothing more than scalded bran and hay, with chilled water always within his reach, as he has generally an inclination to drink; and when he begins to recover, let the quantity of corn be gradually increased, and combined with the scalded bran, and when able, let his work be at first as moderate as possible.

When this Distemper occurs in the autumn or winter months, particularly if the weather is continually wet, cold, or changeable, unless the animal is in high condition, no bleeding whatever is necessary; at least in the majority of cases; and if blood be taken away, it should be in a much less quantity, and with greater caution than in the spring of the year; for if this is not done, the system is liable to become debilitated and the animal rendered more susceptible of a variety of other diseases. During the inflammatory stage, the animal requires to be kept moderately warm, and free from wet and cold, to be fed on bran and hay, to have alteratives given in the same way as before, and to be kept from exercise, not forgetting to let him have plenty of chilled water. When

he begins to feed, the pulse will soon become less frequent, and stronger, and, in a short time, suppuration, or a discharge of healthy matter, or pus, takes place from the nostrils. At this season of the year, when such is observed to be the case, instead of further reducing the animal, and thereby checking the discharge from the nostrils, it will be much better to give him a moderate quantity of corn, and to administer daily tonic medicines, balls, composed of equal parts of powdered ginger and gentian roots, made into a mass with treacle, which will enable the system to recover its lost power, and thereby prevent the animal from becoming Glandered, or Glandered and Farciéd. The same beneficial result may be obtained by adopting this mode of treatment in Strangles and common Colds.

In this disease, the tonic stimulating and cordial plan, after the suppurative process has taken place, is not so requisite in the spring and summer, as in the autumn and winter months; for, in the former, the season is more favourable, and the system more vigorous, consequently, the administration of tonic stimulating medicines is not so necessary as at the other seasons of the year.

In the autumn and winter, after suppuration has taken place, the stimulating plan is frequently followed by very beneficial effects, in most instances

increasing the animal's strength and appetite, and thus preventing the disease from running into Glanders and Farcy.

SECTION IV.

Bad effects which arise from suddenly checking the suppuration in Strangles, Common Colds, Distemper, (Epizootic disease.)

The bad effects which arise from suddenly checking the suppurative process of the disease by copious and too frequent blood-lettings, purgative, and diuretic medicines, are these: instead of the proper suppuration, or discharge of healthy matter from the nostrils taking place, none whatever, or at least but a very scanty quantity, is thrown off from the membrane, and if the suppuration is established it generally diminishes, the pulse becomes quicker and weaker, the respiration or breathing more frequent, and in cases where the extremities are somewhat enlarged, they become much more dropsical, (Edematous.) There are other effects which now become evident. In consequence of the debility which the system is frequently brought into by these means, many of those cases in which the extremities were not before enlarged and dropsical,

immediately became so ; and there are persons, who, from not being aware that this improper mode of treatment has been the cause of these effects, increase, and continue the use of diuretic medicines, with a view, they contend, of stimulating the kidneys,—of causing the absorbents to take on a greater action, and thus remove the watery parts of the blood.

Now there cannot, I conceive, be a more erroneous idea than this ; for, whatever excites the kidneys into powerful action, must have the same effect on the system as purgative medicines, which powerfully increase the action of the bowels, and, if repeatedly or injudiciously administered, ultimately produce general debility and death. Similar also will be the frequent application of diuretic medicines. It is certainly true, that, like bleeding or purging, they will for a short time diminish the size of the legs, but after the immediate effect is over, the extremities are mostly found to become much larger than before.

Thus, then, we find that bleeding, purging, and diuretic medicines are, in many cases, very valuable remedies in subduing acute inflammation, but there are many cases in which these auxiliaries are carried by far to too great an extreme, particularly in Distemper, (or Epizootic disease,) a disease in which there is most commonly great langour and debility of the whole system. Hence a cautious

mode of treatment ought to be adopted; for if either bleeding or purging remedies be carried to too great an excess before or after a discharge from the nostrils, or the suppurative process has commenced, the system becomes so extremely debilitated, that the animal frequently dies, or becomes either directly, or shortly afterwards, Glandered or Farciéd. The same occurrence is to be observed when a similar mode of treatment is adopted in Strangles, Common Colds, (or Catarrh,) but not so frequently as in Distemper, (or Epizootic disease.)

It sometimes happens that the symptoms of these diseases are much slighter in some animals than in others, and in many cases, with proper care and treatment, the animal, although in a state of disease, is yet capable of undergoing moderate exertion, without much inconvenience, and would, if properly attended to, soon recover; but when, from the injudicious use of bad food, or too much hard work, or from being exposed to impure air, the suppurative process or discharge from the nostrils (as described before in alluding to the too frequent repetition of bleeding &c.,) is prevented from taking place, it is suddenly and altogether checked, or rendered less in quantity, and of an unhealthy character, thus ultimately constituting Glanders.

SECTION V.

*Symptoms of Glanders as following Common Colds,
Distemper, (or Epizootic Disease.)*

The following are the symptoms of Glanders, when it occurs after Common Colds and Distemper, and also in those cases in which the former modes of treatment have been pursued previous to suppuration having taken place. Instead of a healthy discharge running from both the nostrils, a slight, unhealthy discharge, of the description already stated in the account of the symptoms of Glanders, appears from one or both the nostrils, with a corresponding unhealthy appearance of the mucous membrane of the nostrils, either with or without ulceration, and an enlargement of one or both of the Sub-maxillary lymphatic glands. But in those cases in which the healthy suppuration or discharge from the nostrils has already commenced, and in which any of the former modes of injudicious treatment have been pursued, and under either state the animal has been long exposed to wet and cold, the discharge from the nostrils suddenly becomes diminished in quantity, loses its white, healthy appearance, and assumes a dark coloured

unhealthy character. The mucous membrane of the nostrils is also found to have lost its red and healthy hue, and to have taken on an unhealthy character. So likewise will the ulcers of this part, if any ulceration existed, previous to these symptoms occurring: for if ulceration has not commenced, it will in most cases ultimately take place, and the membrane assume the character as described in the account of Glanders. In many cases, also, unhealthy tumors, abscesses, ulcers, &c. afterwards appear in the skin of different parts of the body, and thus constitute Farcy.

CHAPTER VI.

NATURE AND SYMPTOMS, PROGRESS AND TERMINATION,
OF INFLAMMATION OF THE SUBSTANCE OF THE LUNGS,
ENDING IN, OR FOLLOWED BY, GLANDERS OR FARCY.

It has already been stated, that, in Strangles, Common Colds, and Distemper, the inflammation of the nostrils sometimes extends down the membrane of the wind-pipe, (or trachea,) to the substance of the lungs;—that whenever this is the case, the general circulation and respiration was found to be considerably increased, and that the inflammation of the mucous membrane of the nostrils was the primary, and the affection of the substance of the lungs, the secondary disease;—that in many cases of this description, from neglect or improper treatment, they were found to take on those symptoms of disease which are usually denominated Glanders and Farcy. I shall therefore now proceed to describe inflammation of the lungs; a disease which very frequently takes place in the horse, independent of such diseases as Strangles, Common Colds, Distemper, (or Epizootic disease,) &c.

This disease is liable to occur in horses of all ages, and at every season of the year. The most

general time, however, of its appearance is in the spring and summer months, when the weather is very hot and dry. Those horses which are most susceptible are such as have been driven a greater distance than their strength will bear ;—dealers' horses, that have been brought fresh from the country, and closely confined in hot stables, and more especially those that are enduring the severe exertion of being broken into harness. Those horses likewise which are suddenly put to work, and made to undergo great exertion after having been sometime lying by, and have not lately been used to hard work.

Inflammation of the lungs also occurs from sudden changes of the weather, in the autumn and winter months,—particularly from that which generally accompanies the breaking up of a severe or long continued frost.

Inflammation of the lungs, like other inflammatory diseases, varies in its character according to the strength of the animal, as well as the season of the year in which it occurs. It is found to assume two forms, the Acute, and Sub-Acute. The Acute form generally appears in spring and summer, and the Sub-Acute, which is more confined to weak and debilitated animals, in the autumn and winter months.

SECTION I.

Symptoms of Acute Inflammation of the Lungs.

The first stage of Acute Inflammation of the Lungs commences with a full and strong pulse, hot and dry mouth, drooping head, with the nostrils distended, and the respiration increased, indicated by a considerable heaving, or violently unnatural motion of the flanks. The membrane also which covers the eye, and lines the interior of the eyelids will be found, on inverting and inspecting it closely, redder than usual, and there will be an appearance of inflammation in the mucous membrane lining the nostrils. The body is bound, the animal eats little or no food, and very seldom, if ever, lays down.

In the next stage, the pulse is not so full nor frequent, and the appetite, if any previously existed, is entirely gone. There is, likewise, usually, a short but imperfect cough, the exertion of which appears to give the animal great pain. In those cases where such symptoms occur, the animal is seriously and dangerously affected, and there is a remarkably distressed appearance in his countenance, with frequent anxious looks towards his sides: the whole body appears stiff, the fore legs widely distended, and pushed a little forwards,

nor does he lay down until recovering from the effects of the disease. The ears, legs, and surface of the body, is, in most cases, very cold, and the pulse, at the latter stage, mostly weak.

SECTION II.

Symptoms of Sub-Acute Inflammation of the Lungs.

In Sub-Acute inflammation of the Lungs, the pulse, instead of being full and strong, as at the commencement of the Acute form, is, on the contrary, quick and weak; the mouth hot, the respiration quickened, the body bound, in short, all the leading symptoms which present themselves in the Acute form are discernible in this, though as its name implies, the symptoms are less severe; but equally requiring a cautious, if not more cautious treatment, than when the disease assumes a strong and Acute character.

The termination of the Acute and Sub-Acute inflammation of the lungs in horses, like other diseases already treated on, as Strangles, Common Colds, Distemper, (Epizootic disease,) are various; some animals are perfectly restored to health and strength; some linger for a length of time in a debilitated and unhealthy state; some, previous to

death, become either Glandered or Farciéd, while others die rapidly. The terminations of inflammation of the lungs, like those of the former diseases, will, in a great measure, depend on the healthy or unhealthy state of the animal previous to the inflammation coming on, and also on the mode of treatment pursued while the animal is labouring under the disease.

If the disease has been long neglected, or improperly treated, the lungs will become altered in structure, (*see plate, 2, Fig. 1, 2,*) and the animal reduced to a weak and unhealthy state, with a further alteration of the diseased parts, in many cases constituting Glanders or Farcy, and frequently ending in death. Hence, in the latter stages of inflammation of the lungs, it is not unfrequent, particularly in old and debilitated horses, to observe swellings of the legs, with Farcy tumors in the skin.

It is necessary to observe, that, in some cases, untoward results occur when the most judicious modes of treatment have been pursued, arising from the bad and unhealthy state of the body, or the predisposed state in which the system of the animal was, previous to the inflammation of the lungs occurring. This is also sometimes the case when Glanders and Farcy appears or follows other diseases ; particularly with horses which are much out of condition. The other variety of causes

from which it is liable to occur, will be fully treated on hereafter.

Glanders and Farcy frequently occurs from horses being taken to work before they have sufficiently recovered their strength; the debility of the system produced by inflammation of the lungs being very great; or from turning them out to grass, and exposing them to storms of rain or wind, too soon after they have been affected by this, or other diseases. It is, therefore, necessary to be very careful and judicious in the mode of treating horses, after an attack of almost any disease; and instead of turning them out to grass, with the view of recovering their strength, they should be kept loose, in a large and airy box, and allowed a proportionate quantity of green food, and hay, and a regular and moderate degree of walking exercise.

SECTION III.

Symptoms of Glanders and Farcy, as following the Acute and Sub-Acute Inflammation of the Lungs.

The symptoms of Glanders or Farcy following Acute and Sub-Acute inflammation of the lungs, are similar to those already stated in Strangles,

Common Cold, and Distemper, (Epizootic disease,) excepting that, there is not, previously, as in most of the former diseases, a healthy discharge from the membrane of the nostrils, but instead, it will be found to have lost its red and healthy character, (*see plate 1, Fig. 1,*) and to have assumed a yellowish, unhealthy appearance, in some cases exhibiting slight, and at other times, extensive ulceration. There are cases, however, of Glanders following inflammation of the lungs, as in Common Colds, &c., in which there is no ulceration either at the commencement, or for some time afterwards, or until after the symptoms of what is termed Glanders have appeared.

When Glanders follows inflammation of the lungs, the submaxillary lymphatic glands present a diseased appearance, and one of them is commonly more or less enlarged, inflamed, and tender to the touch; and these symptoms are sometimes followed, like all the other diseases with which Glanders is found to be connected, by a general inflammation and enlargement of one or more of the extremities, and, in most instances, also by a number of unhealthy abscesses and ulcers appearing in the skin which covers these parts, (*see plate 3,*) as well as in various other parts of the skin of the body. Whenever this is found to be the case, the animal is then in that state usually denominated Glanders and Farcy. Sometimes this unhealthy inflammation of

the skin, termed Farcy, occurs after inflammation of the lungs as a primary, and after Glanders as a secondary disease; but it also frequently happens that the reverse of this is the case, and that Glanders occurs as a primary, and Farcy as a secondary disease; and there are many cases in which both Glanders and Farcy follow inflammation of the lungs, without occurring after each other.

SECTION IV.

Causes of the symptoms of Glanders and Farcy, as following Inflammation of the Lungs.

The causes of those symptoms of disease usually denominated Glanders and Farcy, and following inflammation of the lungs, are the same as in the cases where they follow Strangles, Common Colds, &c.; and they likewise depend upon several circumstances,—as the state of the animal previous to being affected with disease,—the mode of treatment adopted while labouring under it, and also from his not being sufficiently recovered in health and strength from the first attack of disease: but as a knowledge of these different states of the

animal are of importance, they will be commented on in distinct heads.

If an animal is debilitated, or approaching towards a weak or unhealthy state, previous to inflammation of the lungs, or any other disease which Glanders and Farcy are found to follow, as Strangles, Common Colds, &c., it will be absolutely necessary to adopt the most careful and judicious mode of treatment, although in some instances, even when this is done, the animal either remains in a weak state, or immediately afterwards becomes Glandered and Farcied. It is this weak state more than all others, in which horses are found to be most predisposed, and in which they most frequently exhibit those symptoms of disease called Glanders and Farcy. The various causes which may have brought the animal into this predisposed state, will be more fully treated on under the head of the injudicious practice of allowing horses to become weak and out of condition, by turning them to straw yards, &c.

Hence it becomes extremely necessary, in all cases of this description, to avoid copious and frequent blood lettings, the free use of rowels, blisters, purgative and diuretic medicines, &c., for if these are not resorted to with the greatest caution, the animal, most generally, soon dies, or becomes Glandered or Farcied, which ultimately

ends in death. It is, therefore, necessary, when a horse becomes in any way diseased, to pay very particular attention to the state of the system in which the animal had been previous to its commencing, and by no means to adopt violent remedies, especially with animals which are in a low and weak state of condition prior to disease of any kind occurring.

SECTION V.

Treatment usually pursued in Inflammation of the Lungs.

There are various modes of treatment pursued with horses when labouring under inflammation of the lungs; some bleed,—keep the animal in a moderately cool place,—bandage the legs,—give small doses of alterative medicines,—insert rowels or setons; others keep the animal moderately cool, and *bleed* and *blister* the horse's sides unmercifully, and at the same time bandage his legs, and give small doses of Hellebore internally. This latter mode of treatment, as far as regards the extensive blistering of the sides, and giving white Hellebore root (*Veratrum*) internally, is certainly the most dangerous and injudicious that

Veterinary practitioners can possibly adopt, particularly in the Spring and Summer months, when the weather is dry and hot, and the whole system of animals in general in a much higher degree of excitement than at any other season of the year. The cause of this dangerous and injudicious mode of treatment being introduced into Veterinary practice, I am not at present at full liberty to enter upon, but it is evidently of modern date. The Farriers of the old school were in the habit of bleeding and giving the animal cordial medicines at the commencement of this disease, (the latter of which is bad practice,) but this is nothing when compared with the extensive blistering* now, alas! too much in use, nor do I consider it to be half so injurious as the old, but improper practice of giving cordial or stimulating medicines.

The practice of giving stimulants internally, has been condemned in the strongest terms for years, but to the extensive blistering of the sides we hear of no open objection; neither do we hear any thing said against the ill effects of the white Hellebore root,† when given internally, with a view

* The practice of Blistering, in inflammation of the lungs, will appear in a future Essay, when its very injurious effects will be shown by fair Physiological argument.

† M. Majendie, in speaking of the action of Veratrine (the active part of white Hellebore root) on animals, states, "that if a *small* quantity come in contact with the mucous membrane of

of lowering the pulse. I have repeatedly seen quite the opposite effects produced, when even given in a small dose, viz., that of increased action, with inflammation of the stomach and intestines.

SECTION VI.

After-treatment of Inflammation of the Lungs.

It sometimes appears, that before a horse has sufficiently recovered from an attack of inflammation of the lungs, he is put to his usual work, and either becomes the subject of a fresh attack, remains in a weak and low state, or becomes Glandered or Farcied; and there are instances

the intestines, it becomes inflamed, the irritation spreads, and that purging (and in some animals vomiting) will be produced." In a much larger dose, the substance induces a very great acceleration of the circulation, and of respiration, soon followed by tetanus and death.

A small quantity thrown into the jugular vein, also induces tetanus and death in a very short time; and, even in this case Veratrine produces an effect on the intestinal canal; for, on dissection, the mucous membrane will be found highly injected and inflamed. The lungs also present signs of inflammation and of engorgement.

also when some turn them out, without any regard either to the state of the weather, or the season of the year; the natural consequence is, that the system, being weak from the effect of the previous disease of the lungs, continues in a debilitated state, and the same results follow as in those cases where the animal is taken to laborious exertion immediately after recovery. It is, therefore, necessary for every one who may have sick horses, to pay them every due attention, and be sure and give them a sufficient time to recover their strength and condition; not to take them to work too soon, and by no means to turn them out without strict regard to the state of the weather and season of the year. If this is not done, it will be impossible to prevent the ill effects which so frequently follow, to the destruction of the animal, when a little necessary attention might have saved him. This point will be more fully discussed when we come to the subject of horses becoming out of condition, and Glandered and Farciéd, from a variety of causes.

CHAPTER VII.

NATURE AND SYMPTOMS OF GLANDERS AND FARCY WHEN NOT TAKING PLACE IMMEDIATELY AFTER OTHER INFLAMMATORY DISEASES, AS STRANGLES, COMMON COLDS, INFLAMMATION OF THE LUNGS, &c., ALSO OF GLANDERS AND FARCY INDEPENDENT OF OTHER DISEASES.

HAVING before stated that although Glanders is considered by most authors to be a distinct and separate disease,—that, if properly investigated, it will most commonly be found to be only the latter stage of a common inflammatory disease of the mucous membrane which lines the nostrils and cavities of the head, the throat, (trachea, bronchial tubes, &c.) as well as of the substance of the lungs; and that the violence of the symptoms which these parts assume, when affected with inflammation, is in a great degree varied according to the age and strength of the animal. These diseased appearances are termed Strangles or Colds, either in the Common or Epizootic form, also inflammation of the substance of the lungs, &c.; but having described the appearances which the membrane of these parts presents, and also that of the matter discharged in each disease, as well as the changes which are found to take place when either of these diseases

terminate in, or become Glanders, we shall not enlarge upon them here. It has been observed, however, that in each disease, so long as the membrane is healthy, and the discharge from it found to be unaltered and inoffensive in its character, viz. incapable of producing the symptoms of Glanders by inoculation, that they were considered as only original diseases; and that on the contrary, when the membrane of the nostrils, and the discharge from it assumed an unhealthy appearance, and the matter was found to be of an infectious character, viz. capable of producing by inoculation the symptoms which constitute Glanders, then, under these circumstances, the common inflammatory diseases with which the animal was affected, whether Strangles, Common Colds, &c. were changed from their original names, and designated under one broad and sweeping term,—Glanders. Hence has arisen the terms of *bordering on*, *suspected*, or *approaching* to Glanders, being used when Common Colds, &c., run into Glanders; terms of themselves only showing that, in many instances, these diseased parts present different appearances before they arrive at that stage which constitutes confirmed Glanders.

SECTION I.

Nature of Glanders.

The term Glanders, in all probability originated with those who knew but little regarding the nature and causes of disease in the horse ; and it appears to have been continued as a matter of course, without any one giving a definite description of its nature, excepting that it depended on an animal poison contained in the blood, which, I trust, I shall satisfactorily prove to be founded in error.

Those symptoms of disease which occur in the horse, termed Glanders, depend upon the unhealthy state of the system, into which it may be brought from a variety of causes, particularly by an injudicious mode of treatment either prior to, or while laboring under disease, or before having sufficiently recovered : for instance, when an animal has become Glandered from the Strangles, Common Colds, &c., the same parts are still affected, and still in a state of disease, the difference only being that these diseased parts, and the matter which is discharged, now assume an unhealthy character ; though this is not the only change ; for the matter or discharge also becomes infectious.*

* The nature and cause of this change will be fully explained in its proper place, and under a separate head.

How it has happened that a new name, *viz.* GLANDERS, should have become in such general use among the profession, we are somewhat surprised; though we are able, we imagine, to trace the cause to its source, which we opine to be merely this:—that the discharge and appearances resulting from cold or an inflammatory affection of the lungs, &c., having assumed a diseased aspect; or, in other words become changed from a healthy to an unhealthy character, the want of proper discrimination has led them to mistake the mere alterations of the symptoms of one disease, for the confirmed exhibition of another; which they have dignified with the term, Glanders.

This new name, apparently first given by those unacquainted with the nature and properties of the horse, does not, as a matter of course, constitute it a new disease; for it is, as I have just stated, merely that change or sequel which follows from a healthy to an unhealthy state of the system, and which arises from some of the variety of causes under which disease is found to occur. The healthy disease is usually termed inflammatory, and the unhealthy, *specific* (or peculiar) inflammatory disease. Hence, so long as Common Colds, Inflammation of the lungs, Skin, Cellular membrane underneath, &c., recover under the modes of treatment commonly adopted, so long they are considered as common inflammatory diseases; but as soon as

the ulcers in the skin, and the membrane lining the nostrils, assume an unhealthy appearance, the discharge being at the same time of an infectious nature, and when the disease is not recoverable by common remedies, such as bleeding, physicing, diuretics, &c., but rather aggravated by such treatment, then they are mostly considered either Glanders or Farcy, or what is generally termed a *specific disease*, the cause of which is said to depend on an animal poison having entered the blood.

If an animal is found to become affected with the symptoms of Glanders or Farcy while out at grass,—no uncommon occurrence in very wet seasons,—and more particularly if, a short time previous to turning out, the animal had suffered from disease of any kind, and become debilitated, it is asked, What has been the cause of these symptoms of Glanders or Farcy occurring? and it has been as promptly answered,—That the poison remained dormant in the blood during the time the animal was in the stable, but that, in consequence of being turned to grass, it was brought into action: thus leaving entirely out of view the changeable state of the atmosphere, and the sickly, unhealthy, and debilitated state into which the animal, for some time previous to the symptoms of Glanders or Farcy appearing, was reduced.

SECTION II.

Symptoms of Glanders and Farcy.

The symptoms which constitute Glanders and Farcy in the horse, will be found to occur in a variety of ways; sometimes immediately, and at other times shortly afterwards following other diseases of the membrane of the nostrils, the substance of the lungs, and skin; and occasionally, after the animal has suffered repeatedly from inflammatory diseases, as of the mucous membrane of the nose, the lungs, and skin, either in the form of Common Colds, Acute and Sub-acute inflammation of the lungs, Grease, Œdema, &c., and when, from the alteration in the structure of these parts, (*see Plate 1, Fig. 1, and Plate 2, Fig. 1, 2,*) as well as the unhealthy state into which the system has been reduced, in combination with a variety of other predisposing and exciting causes, the animal is rendered in an unhealthy and predisposed state, he becomes more liable to take on these symptoms of unhealthy disease which constitute Glanders or Farcy.

Glanders or Farcy also takes place in animals which have never suffered or been affected with any previous disease, which will be found to occur from the system being rendered in an unhealthy

and debilitated state, from bad food, long confinement to a stable or stall, want of exercise, impure air, as well as from long exposure to wet and cold. When, however, disease occurs from the system being already in an unhealthy state, instead of a common healthy inflammation taking place, an unhealthy inflammatory disease will be the result, which has been termed Glanders or Farcy, although Glanders or Farcy, or both, may take place immediately, without being preceded or followed by any other disease.

When the symptoms of Glanders follow the Strangles, Common Colds, &c., there is in most instances, and previous to the appearance of these symptoms taking place, a healthy discharge of matter from the nostrils, with a more or less healthy state of the lining membrane; but so soon as these symptoms of disease occur, the matter which is discharged, as well as the appearance of the membrane, will be found to have changed from a healthy to an unhealthy state, and the matter or discharge at the same time adhering to the edges of the nostrils, with an appearance like that of glue or size.

On the other hand, when Glanders occurs from the system having been reduced at some distant time into an unhealthy and predisposed state, and without immediately following any other disease, it will be found to take on such

unhealthy appearances as constitute Glanders ; and when the symptoms of Glanders take place, which they do entirely independent of other diseases, the unhealthy state of the membrane will be the same as when the symptoms is found to follow other diseases with which it has been connected.

A spontaneous and unhealthy discharge from the nostrils will also be found to take place, without following, or being in any way connected, or preceded by a healthy discharge of matter. The symptoms also of the disease of the skin, which is termed Farcy, will be found to occur in a similar manner.

CHAPTER VIII.

DESCRIPTION OF GLANDERS UNDER ALL CIRCUMSTANCES, WHETHER FOLLOWING OTHER DISEASES, OR OCCURRING INDEPENDENT OF THEM—APPEARANCES OF THE DISCHARGE FROM THE NOSTRILS—STATE OF THE MUCOUS MEMBRANE WHICH LINES THE NOSTRILS—PROGRESS OF ULCERATION IN THE MEMBRANE—APPEARANCES AND SIZE OF THE ULCERS—STATE OF THE SUB-MAXILLARY LYMPHATIC GLANDS.

It has already been stated, that the matter or discharge from the nostrils in Glanders is always of a deeper than natural colour, of an unhealthy and infectious character, having very much the appearance of glue or size, and adhering closely to the edges of the nostrils; although there are occasions, when it is thinner and consequently not so adhesive. Again, there are some cases in which it approaches to a healthy character, as may be observed in Strangles, Common Colds, and Distemper, and others in which the discharge takes place from one nostril only, and others in which it is nearly equal from both.

The mucous membrane of the nose, in every case of Glanders, is always paler in colour than natural, unhealthy in appearance, and often con-

tinues in this state for a considerable time without ulceration taking place. In other cases, ulcers soon appear, and rapidly extend themselves in the membrane and septum of the nose.

In some cases the ulcers appear about the size of pin-holes, and gradually increase to that of small peas; in others, the ulceration is large at first, and spreads so extensively as to destroy considerable portions of the cartilage, turbinated bones, and likewise large portions of the internal surface of the frontal, maxillary, and nasal bones, which form the cavities of the head, and on which the membrane of the nostrils is reflected. Large collections of the same sort of unhealthy matter, similar to that which is discharged from the nose, are sometimes found in some of these cavities after death; and the consequence is that the discharge from the nostrils is sometimes found to have become so much diminished, or even suspended, as to lead the owner erroneously to suppose the horse to be in a fair way of recovery; though this circumstance is a delusive symptom, and only produced from the matter being confined in the sinuses or cavities of the head; for if the animal is put to work the discharge immediately comes on again, worse than before.

The membrane of the nostrils, as well as the ulcers in it, are found to assume various unhealthy appearances in Glanders, both in approaching to

that of a healthy and an unhealthy state; the ulcers in some cases assuming a reddish, healthy character, in others, a tawny, copper colour, and sometimes a dark brown, or still more unhealthy hue. The membrane of the nose is also found to assume various unhealthy appearances, approaching in some cases to a healthy, and in others to an unhealthy character; and it is no doubt in consequence of these different appearances, that Veterinary practitioners have made use of such terms as *bordering on*, *approaching to*, and *suspected* Glanders; the worst form or state having been commonly considered as the true form of Glanders.

In those cases where ulceration of the membrane is found to be extensive, and portions of the membrane begin to separate, and slough away, there is sometimes a slight, and at others, a considerable bleeding, or hemorrhage from the nostrils; and this generally occurs when the animal has been considerably exerted, or even from slighter causes, and also where there is but little ulceration of the membrane; though not so frequent as when the ulcers are extensive.

When the diseased portions of the mucous membranes of the nose begin to separate, the ulcers usually present uneven surfaces, without any appearance of healthy granulations; unless it is in those cases where the animal is recovering from the disease in consequence of the system having been

excited by medicine, or food, and brought into a healthy state.

The state in which the sub-maxillary lymphatic glands are generally found is that of their being slightly enlarged, inflamed, and tender; and, in many cases, after remaining in this state for a certain time, they become schirrous, and afterwards change from this hardened state to a softer, suppurate, and discharge a small quantity of unhealthy matter or pus. This is frequently the case when the symptoms of Glanders follow Colds, either in the common or Epizootic form, Inflammation of the lungs, &c., and also when Glanders occurs independent of such diseases. The lymphatic gland of one side only is occasionally found diseased, and the discharge is then mostly confined to the nostril on the same side as the enlarged gland. And, again, there are other cases in which the discharge and enlargement of the glands are nearly equal on both sides: or a discharge in Glanders may appear, either from one or both nostrils, without any enlargement or symptom of disease of the lymphatic gland on either side; and this may be the case under every circumstance in which the symptoms of Glanders is found to occur, except when it follows either the true or false form of Strangles. In other cases, the discharge is very offensive; and this is not unfrequently the case when the symptoms follow

inflammation of the lungs, and likewise when there is extensive disease of the mucous membrane of the nostrils, but more particularly when the bones are in a diseased state ; and, on the other hand, there are cases in which the matter discharged from the nostrils is not in the least offensive in character.

CHAPTER IX.

STATE OF THE PARTS AFFECTED IN GLANDERS AS SEEN ON DISSECTION, OR POST MORTEM APPEARANCES, WHEN THE RESULT OF INFLAMMATION OF THE LUNGS, &c.; AND LIKEWISE WHEN INDEPENDENT OF SUCH INFLAMMATORY DISEASES.—NATURE AND CAUSE OF THE DISEASED PARTS SEPARATELY CONSIDERED, VIZ., TUBERCLES, VOMICA, HEPATIZATION, EMPHYSEMA, &c.

THE frontal, or maxillary cavities of the head, in Glanders, occasionally contain large quantities of matter of a similarly unhealthy character to that which is discharged from the nostrils, whether the membrane is in an ulcerated state or not. There are other parts in which it is also confined. It is sometimes found in the folds of the membrane covering the turbinated bones, as well as the various cavities in those bones; likewise in the bronchial tubes and substance of the lungs, and contained in both small and large cysts termed tubercles and vomicæ, and the matter, if taken from these abscesses in Glandered horses is generally found to be of an equally infectious character with that discharged from the nostrils during the life of the animal.

The membrane of the wind-pipe (or trachea) is

a continuation of that which lines the nostrils and cavities of the head, and on examination after death, is found to present a similarly unhealthy appearance, which is most commonly of a faint, copper coloured, unhealthy hue; and this membrane presents, at one time slight, and at others extensive ulceration; and when the membrane is thus diseased, the ulcers have the same unhealthy appearance. The portions of this membrane which belong to the trachea and bronchial tubes, are very seldom found in a state of ulceration, without also that which covers the septum and lines the nostrils being in the same state. But it is quite the reverse with that portion of the membrane which lines the nostrils and cavities, and covers the septum of the nose; this part being often found slightly or extensively ulcerated, without the tracheal and bronchial portions exhibiting, in the slightest degree, ulceration.

There are some cases of Glanders met with, in which we are not able to detect any ulceration in the mucous membrane of the nose, until after the death of the animal; and this arises from the situation of the ulcers being at the upper part, and consequently impossible to be seen. Sometimes the ulcers are found in great numbers in the course of the large veins of the septum, and in other cases a considerable number are to be observed in those portions of the membrane which are reflected, and

form folds with the turbinated bones, and also in that part which covers the turbinated prominences. The ulcers of these parts sometimes appear in small insular clusters, situated at different distances from each other, and, at others, they are found in broad and extended patches : and again, the cartilage which forms the septum, and also the turbinated bones, are found, occasionally, to be extensively destroyed by ulceration ; and, in some cases, the bones of the head, as the frontal, maxillary, &c., are softened and spongy on their inner surface, and covered with a similar sort of excrescence. On examining the interior of some horses' heads, which had been treated for Glanders, and recovered, but afterwards died from other causes, I have found both when there had been slight, as well as when there had been extensive ulceration of the parts, that the ulcers had completely healed, and the mucous membrane, which before had been altogether in a diseased state, and of an unhealthy appearance, had assumed a perfect, healthy character ; and in those cases where the ulcers have been but small, there have generally been left small pits or indentations in the membrane, of a somewhat similar nature to those remaining in the skin of the human subject after the small-pox. But where extensive ulceration had formed, the diseased parts were cicatrised, having broad patches or indentations similar in

appearance to the human skin after being injured by ulceration and subsequently healed. I have now under treatment a horse that was very valuable before he became diseased, which I bought in order to cure, and which had, at the time I purchased him, an unhealthy discharge from both nostrils, mixed with blood, as well as an extensive ulceration of the septum, and an enlargement of the lymphatic glands,—in short, he was altogether in a very lamentable condition, but through my mode of treatment he is nearly recovered.

SECTION I.

State of the Lungs as seen on Dissection.

On examining the lungs of Glandered horses after death, it is a common occurrence to find small, round bodies, called tubercles; they vary in size in the same as well as in different animals, but more particularly in the horse, when exhibiting the symptoms which constitute Glanders: the consequence is, that they have been termed by French writers, Milliary, Pisiform, and Unciform. These tubercles vary in size, from a mustard seed to that of a large pea. (*See plate 2, Fig. 1.*) The large ones, in particular, when soft, contain an unhealthy

matter, which varies in its character, and if taken from the tubercles in the lungs of a Glandered horse, it is found to be capable of producing similar effects on the system as the discharge from the nostrils of the same animal would by inoculation.

Some tubercles are hard, particularly the smaller ones, and very seldom contain any matter, and they appear to be formed of condensed portions of the cellular texture of those parts in which they are situated, and are found to be either in a state of inflammation proceeding to suppuration, or hard and schirrous, the effect of the former inflammation.

Tubercles are not only formed in the cellular texture of the lungs of a great many animals, as well as human subjects, but occasionally in all the other textures of different parts of the body : and they appear to be only abscesses formed in the cellular texture, and, like large abscesses of other parts, the effects of inflammation. Those tubercles which are large and of a soft nature, are found sometimes to contain matter of a yellowish, cheese-like consistency, though occasionally it is found to be of a dark brown, or reddish hue, and, in some few instances very thin, and straw coloured ; in others it is also of a thin, dark, and reddish appearance.

SECTION II.

Nature and Cause of Tubercles : opinions of various authors.

The opinions which have been formed respecting the nature and cause of tubercles which are found in the lungs and other parts of the body of animals, as well as the human subject, are numerous. Some of the modern French authors,* Dupuy, Laennec, and others, consider these tubercles as being the product of an unknown cause ; and Dupuy has described them as being the cause of Glanders in the horse, and has given the following account of them.† “ The primitive tubercle is a little, firm, grey, hard body, composed of a fine cellular tissue, in which is deposited a substance that proves to be phosphate and carbonate of lime ; it is mostly inclosed in a small cyst, appearing to be a production of the tissue in which it is found. These incipient tubercles exist in small numbers,

* M. Dupuy, one of the professors of the Royal Veterinary School at Alfort : M. Laennec, Regius Professor of Medicine in the College of France.

† From a translation of Dupuy's work on Glanders, in Mr. Percivall's series of Lectures, Part III., p. 467.

and interfere but little with the functions of the affected part. At this time, the animal enjoys a flourishing state of health, and Glanders is unknown to exist. We next discover, without being able to assign any satisfactory rationale for it, that the tubercles grow more numerous; in which case they occasion a discharge, or flux, most commonly from one nostril; this is regarded as Catarrh, or Chronic defluxion, or, should the horse be young, as Strangles." And Dupuy also observes that, "the space of time, during which the tubercles preserve this organization grow and increase, (five or six years, perhaps,) constitutes the first stage, during which they resemble so many poppy seeds.

"In the second stage the tubercle grows soft—disorganized, and degenerates and becomes converted into an ulcer; this ulcerative degeneration is what has been seized upon by LAFOSSE, CHABERT, and other authors, and made the basis of their divisions and distinctions of Glanders."—"The ulcerations observed upon the mucous membrane of the nose in the last period of Glanders, consequent upon the degeneration of the tubercles, are insulated, or united, grouped or so near one another that in meeting they disorganize a broad patch of the Schneiderian membrane. These alterations depend upon the variety of the tuberculous affection." It therefore appears, M. Dupuy considered tubercles as being the *cause*, and not

the *effect* of disease; and also that the ulceration of the membrane of the nostrils in Glandered horses, was of the same nature as the tubercles which are found in the lungs and other parts of the body; for he further observes, "One important consideration, however, is, that these tubercles multiply under the influence of cold and wet, at least I have found that horses so exposed had a greater number of tubercles in their lymphatic glands and other parts of their economy. These (glandular) tubercles grow soft and degenerate, become abscesses, and convert the whole interior of the gland into little cysts, whose parietes are dense, cartilaginous, and occasionally bony. The cysts in inveterate cases are found in a state of ulceration, similar to that which destroys the membrane of the nose."

In M. Laennec's work* on diseases of the chest in the human subject, it is stated, that "tubercles are not the product of inflammation of any of the constituent textures of the lungs," but that "they are merely occasional causes, the real cause, like that of all diseases, being probably beyond our reach." From this assertion, then, of Laennec's, it appears, that he attended more to the appearances of disease after death than to the nature and

* A Treatise on the diseases of the Chest, &c., by R. T. H. Laennec, M. D., translated by John Forbes, M. D., 1827. Second edition, page 297.

causes of them while the patients were living, or surely he would never have made such an assertion as that of the nature and cause of "all diseases being probably beyond our reach." The nature and cause of most diseases is undoubtedly within our reach, and, if we only properly investigate the subject, there is but very little chance of being disappointed, and of our not arriving at the true causes ; particularly with regard to the nature and cause of tubercles in the lungs and other parts of the body, as it is easy to be proved by common observation and experiments on animals.

M. Laennec further observes, that M. Broussais maintains that tubercles are the effect of inflammation, and that "it has been asserted by one of M. Broussais's followers that he could produce tubercles at pleasure by *irritating in a certain manner* the bronchia of a dog" And again, "but I believe the thing has never yet been done, nor the manner of doing it ever explained:" and he likewise states, "there is not a more ancient opinion in physic, or one that has been longer applied by the vulgar than that an ill-treated or neglected cold is apt to degenerate into phthisis.* This old notion

* This I consider to be a very just observation and well applicable to Glanders in the horse ; for in very bad and irrecoverable cases, the same diseased appearances present themselves in the lungs of the horse, as are found in consumption (or phthisis) in the human subject, viz., Tubercles, Vomicæ, &c.

has been adopted by M. Broussais with no better reason, apparently, than that which influenced its early patrons." The reader will thus perceive, from these opinions respecting the nature and causes of tubercles, that they are but very imperfectly understood; one class contending for a known cause,—inflammation, and another that the causes are unknown, and who, in short, look on tubercles as being the *cause* rather than the *effect* of disease.

The opinion of M. Broussais, as regards the cause of tubercles, appears to me by far the most correct, as I have satisfactorily proved by experiments: consequently, the statement which Laennec has made, that "the real cause of tubercles is unknown, and that like all diseases, probably beyond our reach, is little better than like advancing an imaginary hypothesis with a view of settling a question without any farther inquiry.

The facts which I have now to offer, respecting the cause of tubercles, are in confirmation of the opinion of M. Broussais, and derived from actual experiments and observation, without any previous knowledge of his entertaining similar opinions on this subject. If the wind-pipe (or trachea) of a healthy ass is laid open, and an irritating fluid, as a solution of blue vitriol, (sulphate of copper,) is introduced, acute inflammation of the whole system would be the immediate result, and if the

animal has sufficient strength to withstand the effects for a few days without death taking place, which, in most instances is the case, tubercles of the lungs containing matter or pus, is almost certain to follow, and a quantity of water will also be found in the chest ; and these results are commonly to be observed at the end of eight or ten days, when death mostly takes place. The same results will be found to occur, if an irritating fluid is introduced into the jugular or any of the other large veins, and thus conveyed through the circulation to the lungs, or by inoculating the skin of the nostrils, or any other part of the body, with the matter of Glanders or Farcy, or any *unhealthy* matter taken from horses labouring under such diseases as Grease, &c., and not only will tubercles of the lungs be the result, but an unhealthy infectious discharge from one or both of the nostrils, accompanied with inflammation and enlargement of one or both of the sub-maxillary lymphatic glands, and in some cases, tubercles in the mucous membrane followed by extensive ulceration, as well as abscesses in different parts of the skin. In the first instance, when the *membrane of the nose* is alone affected, it constitutes Glanders, and in the second, when the *skin* is affected, Glanders and Farcy.

The diseased appearances which are called Glanders and Farcy in the horse, may be produced at any time in the ass, by introducing an irritating

fluid into the circulation, or by infectious matter taken from an unhealthy and diseased animal.

No one I suspect will doubt, that inflammation of the various textures of the body is the true cause of tubercles, after having repeated these experiments. Tubercles are also frequently the effects of inflammation of the lungs and other parts of the body, produced by sudden or continued exposure to wet and cold. M. Dupuy, it appears, had some notion of this sort; for he states, when treating on tubercles as being the cause of Glanders in horses,—“One important consideration, however, is, that the tubercles multiply under the influence of wet and cold; at least I have found horses so exposed had a greater number of tubercles in their lymphatic glands and other parts of their economy.” But although this author asserts, that he had seen this, he still adheres to the erroneous notion, that “tubercles are the effects of an unknown cause, and that they are composed of phosphate and carbonate of lime inclosed in a small cyst, appearing to be a production of the tissue, in which they are formed.” This kind of primitive tubercle M. Dupuy considers to be the cause of disease, from frequently finding them in the textures of healthy animals: a circumstance of which I am fully aware, from having frequently observed them in the lungs of healthy horses, sheep, &c. But then I am in the habit of considering them to

be the *effect* and not the *cause* of disease, and that they are nothing more than tubercles or cellular abscesses in a chronic state; the effect of former inflammation of the parts in which they are found; and that they have been checked in their progress towards suppuration by the cause of the inflammation being removed; or, like other abscesses, having gone through actual suppuration, and the matter become absorbed, the parts have in consequence been left in a thickened and condensed state, without much injury to the part itself, or materially impairing the health of the animal; and that tubercles in these cases are no doubt the effects of inflammation in the form of Colds, Inflammation of the lungs, &c. When these diseases often occur, or are neglected, fresh tubercles or abscesses form, and at last the health of the animal is materially weakened and injured, and the system in consequence becomes unhealthy and debilitated, and is in the horse frequently attended with a discharge at the nose, or ulceration of the skin, and thus constituting either Glanders or Farcy. In M. Laennec's work, the translator observes in a Note, (p. 298,) "It is hardly necessary to refer to the crude notions of the ancients on this subject. Hippocrates considered them owing to the putrefaction of the phlegm or bile; and the opinions of his successors, and those of Galen, for many centuries, were

equally intelligible and correct. In more modern times, still greater variety of opinion has prevailed respecting tubercles. They have been considered as lymphatic glands rendered visible by inflammation in the first place, and then subjected to the common progress of this morbid process, such as suppuration, ulceration, &c. This was the opinion, with some slight difference, of Sylvius, Wepfer, Tralles, and a great many more of our modern writers; and it is still that of M. Broussais." Laennec states as follows, but without attempting to give any opinion of his own, (p. 295.) "It is said that chemical analysis discovers no difference between the softened matter of tubercles and true pus; in like manner, I say, that it discovers none between the albumen of the egg, and the secretion of certain cancers: but these facts prove the imperfection of chemistry, rather than the identity of the matters in question."

In reply to this, I have to observe, that supposing the chemist detects by his analysis a peculiar chemical substance in tubercles, which M. Dupuy states to be phosphate and carbonate of lime, what in the name of common sense has his chemical analysis to do with explaining the nature and cause of organic disease? for the laws of chemistry are different from those of vitality, and the laws of the one can never explain those of the other, and however deep and closely the chemist

may study his science, when he comes to be fairly pitted against the physiologist who has well investigated the laws of vitality, as connected with living animal bodies, we shall soon find that the skill of the chemist will avail him but little in the investigation, or in throwing light on the nature and cause of organic disease. In regard to the opinions of tubercles being, "lymphatic glands rendered visible by inflammation in the first place, and then subjected to the common progress of this morbid process, such as suppuration, ulceration," &c., they appear to me as assertions without foundation or proof; for if they were lymphatic glands rendered visible by inflammation, how then can they be tubercles, as lymphatic glands very often contain tubercles themselves.

The following rationale appears to me far the most plausible as to the nature and cause of tubercles in the horse and other animals, as well as in the human subject :—That they are small cellular abscesses more particularly confined to the textures of weak animals, as strong ones rarely exhibit them; and when they do, the inflammation which produced them has existed only in a very slight degree; and in proof of their being nothing more than abscesses, it is a known fact that they pass through certain states of inflammation, and frequently contain matter or pus, like large abscesses in the lungs and other parts of the body, which

occur in animals that are stronger and in a more vigorous state of health. The reason why tubercles, or cellular abscesses, are found to occur in the lymphatic glands, and more particularly the sub-maxillary of the horse—which is the case when these glands become hard and schirrous, as in glanders, arises in consequence of the arterial system of such animals being weaker, more debilitated, and less active than it is in those in which the lymphatic glands become inflamed, as in cases of Strangles; for in the true Strangles, from the system being in a healthy and vigorous state, the inflammation of these glands terminates in the product of a large quantity of healthy matter, or pus; while, on the contrary, from the whole system being in a weak and unhealthy state, as in glanders, the inflamed state of these glands are not capable of producing a large abscess, and consequently but a small quantity of unhealthy pus, which is contained in a number of very small tubercular abscesses.

When the cellular texture of the lungs becomes affected with tubercular abscesses, the inflammation which produces them is not very violent. We may however state, that in strong animals, if the inflammation is mild, small abscesses or tubercles will very often appear as the result, and on the contrary, if the inflammation is strong, large abscesses or vomicæ; (*see plate 2, fig. 2*); but if

inflammation occurs in the lungs of a weak animal, the inflammatory action cannot of course be strong, and hence we have in most such animals what I have termed tubercular abscesses.

Tubercles, therefore, may appear under three forms :—

1st, In a state proceeding towards suppuration ;

2ndly, In a state of actual suppuration ; and

3rdly, In a chronic, schirrous, or condensed form, either from having gone through the former states, or from having been checked in their progress towards it by that which removed the cause of the inflammation.

I have already stated, that M. Dupuy considers “the ulceration observed in the membrane of the nose, in the last period of Glanders, consequent upon the degeneration of the tubercles when they are insulated, united, grouped, or so near to one another, that in meeting they disorganize a broad patch of the schneiderian membrane ;” and also that he remarks, that the discharge from the membrane of the nostrils, in chronic catarrh as well as in Strangles, is found to be in consequence of a tubercular affection of these parts ; and hence Common Colds, Strangles, Glanders, &c., is considered to depend on this tubercular disease. Now in every one of these instances he has mistaken the effect for the cause ; for we may have tubercular abscess of a mucous membrane, either with or without

ulceration, as well as healthy or unhealthy abscesses and ulcers in the skin; and in every instance it is an effect, and not a cause of disease; the inflammation of these parts in the majority of cases being produced, from the sudden exposure from heat to cold, or from cold to heat, storms of rain, bad food and air, violent or over-exertion.

SECTION III.

Vomica of the Lungs.

HAVING endeavoured to clear up the point as regards the true nature and cause of tubercles, or more properly speaking, minute cellular abscesses, I shall next attempt to describe the true abscess, or what is termed, vomica of the lungs, and frequently found in the lungs of horses, when destroyed in the last or incurable stage of Glanders. These, like tubercles or small abscesses, arise from inflammation of the parts, and are found to take place in such animals as have a stronger circulation than those wherein tubercles or small abscesses occur, in consequence of violent acute inflammation of the lungs.

The Vomica, or abscess, in the lungs of horses, vary in size, like tubercles, from a large hazel nut,

to that of a hen's egg; the result of acute inflammation, and is generally found to occur in animals that are of a stronger nature; whereas the largest tubercles seldom exceed that of a middling sized pea, and from being the effect of a weak or sub-acute inflammation, are mostly confined to weak animals. Thus if a strong horse which has been highly fed, and in the constant habit of undergoing violent exertion, and exposed to a high degree of temperature in a close and hot stable, is attacked with inflammation of the lungs, and dies in consequence, it is not unfrequent to find a number of vomicæ in the lungs. But on the contrary, where horses are weak, badly fed, exposed to wet or cold, not over exercised, and the circulation weaker, the small kind of abscess or tubercle is most commonly found.

The matter or pus contained in the vomica of Glanders, like that of the tubercle, is found to assume a more or less unhealthy appearance, and if introduced into the circulation of a healthy ass, by inoculation, is capable of producing general irritation, and similar results as the matter of tubercles. Hence mostly arises tubercles of the lungs, ulceration of the membrane of the nostrils with a discharge, and abscess of the skin, thus constituting Glanders and Farcy. These effects do not only follow from inoculating an ass with the matter discharged from the diseased parts in

Glanders or Farcy, but also from the discharge taken from bad and long-neglected cases of Grease in unhealthy and debilitated horses, or by introducing the unhealthy blood of one animal into the system of another through the jugular vein, as well as by a solution of sulphate of copper, &c. Similar effects also follow the injection of irritating fluids into the wind-pipe (or trachea).

SECTION IV.

Hepaticization of the Lungs.

In some Glandered horses, the lungs, instead of containing tubercles or vomicae, are found to be in that condensed or schirrous state which has been termed by French writers, hepaticization. On making an incision, it appears in its nature rather to resemble a portion of liver than of lung, in consequence of the cellular texture being obliterated by inflammation.

This diseased structure never affects the entire lungs, for the animal always dies before such extensive alteration can be accomplished. It is liable to take place both in the small and large portions of the lungs, particularly in the anterior part of the right and left lobes, or those portions

which fill up the spaces formed by the three first ribs, by the lateral part of the heart, or external portions of the pericardium or membrane covering the heart. Sometimes there are also condensed masses situated in larger portions of the lungs and occupying a considerable space. This description of lung, when cut into slices, and thrown into water, from the cellular texture being destroyed, immediately sinks, whereas it would, if in a healthy state, from the air which it contains, float upon the surface.

Hepaticized portions of lung have various appearances ; sometimes they are found to be of a dark brown or reddish colour, at others, and more frequently they are dark grey, and when cut into, are almost as compact as cartilage, without the least trace of their original cellular texture existing. Sometimes these portions, throughout their whole extent, are found to contain innumerable small tubercles in a state of suppuration, and similar in character to those seen in the cellular texture of the lungs when not in this hepaticized or condensed state.

The immediate cause of hepaticization of the lungs is mostly considered to arise from an effusion of lymph into the cellular texture, the result of previous inflammation ; though there are persons who contend that tubercles, vomicae, hepaticization, &c., of the lungs are the sole effect of a *poison*

contained in the blood. I trust, however, that I shall hereafter be able to show that these alterations of structure are produced by the sudden change of temperature, state of the air, food, and exercise, and that the notion respecting the *poison* is only *imaginary*, and that in proportion to the extent and debility, and the disposition of these parts to inflammation, so will the animal in its frequency be rendered more debilitated and unhealthy, and of course more susceptible to every kind of disease, and particularly liable to exhibit those symptoms which are denominated Glanders and Farcy, and thus, apparently, in consequence of a considerable portion of the structure of one of the most important organs concerned in the support of life having been destroyed.

SECTION V.

State of the Membrane covering the Lungs.

When acute inflammation of the lungs is immediately followed by Glanders, the membrane (or pleura) which covers them, and lines the chest, is sometimes found in a high state of disease, adhering to the sides, and covered with a layer of yellow substance, technically termed self-coagulable lymph, frequently in conjunction with a quantity of serous effusion within the cavities of the chest.

The cause of the disease, then, of the membrane, (or pleura,) and the consequent effusion, is evident. It arises in consequence of inflammation of the parts of which it forms a covering, and, no doubt, participates in the inflammation of the primary diseased parts; although some authors and practitioners consider and treat the affection of this membrane as a separate and distinct disease. I cannot coincide with them; and it appears to me that they have borrowed their ideas respecting it from writers on human diseases, rather than from sound veterinary pathology and judicious observation; and I am very much disposed to believe that, even in the human subject, the symptoms which constitute what is termed pleurisy, is only an effect of a greater or less degree of inflammation of the substance of the lungs, or consequence of a primary inflammation of the intercostal muscles from change of clothing, sudden exposure to wet and cold, or other injudicious circumstances.

SECTION VI.

Emphysema of the Lungs.

In a great number of Glandered horses, after death, the lungs are found to present, whether tubercles exist in the cellular texture or not, a par-

ticularly soft, white, and delicate appearance ; being at the same time much larger and lighter than they are commonly met with in horses that are destroyed when in perfect health. This particular appearance of the lungs is not only common to Glandered horses, but is likewise found in the greater number of such as are destroyed when out of condition,—brought into that state from a variety of causes, as being fed with bad hay, autumn grass, &c. Similar appearances are likewise very often met with in broken-winded horses, a disease frequently produced by bad feeding.

When the lungs exhibit this sort of appearance, they are called Emphysematous, and it is considered to arise in consequence of an unusual inflation of air into the cellular membrane. It has been stated that broken wind is caused by the air-cells being ruptured ; but Mr. B. Clark, after advancing some opinions on the subject, states, that “ the exact way in which Emphysema occurs has not yet been ascertained.” I consider, however, the cause of the white, delicate, light, and enlarged state of the cellular texture of the lungs, both in Glandered and broken-winded horses, to arise in consequence of the whole of the animal's system having been brought into a weak state, and more particularly the lungs ; and this may take place from a variety of predisposing causes, as the sudden transition from good and high feeding to

that of a poor, low, and impoverishing state of keep. It is, moreover, by no means uncommon to see horses that have been taken from the stable in good condition, and perfectly sound in wind, after having been turned out to grass, exposed, and perhaps badly fed, brought up again considerably out of condition, with swellings and enlargements of the extremities, and, in many instances, with either broken wind, Glanders, or Farcy.

CHAPTER X.

DIVISION OF THE SYMPTOMS OF GLANDERS ACCORDING TO THE PARTS AFFECTED, VIZ., *1st*, WHEN CONFINED TO THE MUCOUS MEMBRANE LINING THE NOSE AND CAVITIES OF THE HEAD. *2dly*, WHEN THE LUNGS ARE ALSO DISEASED.

HAVING described those diseased appearances which constitute Glanders, and which are found in horses that are destroyed, or die, it becomes necessary to observe that these appearances vary in nearly every animal, being in some slight, in others complicated; and that the mucous membrane of the nostrils sometimes exhibits a considerable, and at other times only a slight diseased appearance; not but that there are cases in which the lungs and every other part of the body will be found without any appearance of disease or disorganization, allowing that the interior parts of the body are usually paler in colour, and weaker in texture, than is to be observed in horses when destroyed in a healthy state. On the other hand, diseased appearances are not always confined to the head, the lungs being sometimes slightly diseased, occasionally highly so, presenting Tubercles, Vomicæ, Hepatization, Emphysema, &c.

In a number of instances, the diseased appearances are wholly confined to the mucous membrane of the nostrils, and where the symptoms have not arrived to that extent which is commonly considered the true form of Glanders; and such cases as these are usually but improperly termed suspected Glanders; and most of them would soon recover if a proper and judicious mode of treatment was resorted to, instead of reducing the animal by hard work, &c., particularly young horses.

It is of the greatest consequence, therefore, to owners, who they employ about their animals when diseased. Numbers of very valuable animals, with only slight unhealthy discharges from the nostrils, have been condemned, as being incurably Glandered, wholly in consequence of such unskilful persons being unacquainted with the true nature and cause of the *unhealthy* state of the animal, and which is the sole cause of their exhibiting such symptoms.

Again, there is another class of persons equally ignorant with the former, who, with their *great and mighty Specifics*, undertake to cure all cases, even those of the lungs when badly diseased, and when there is not even the shadow of a chance of their effecting a cure, unless by supplying the animal with new organs. It therefore behoves owners to be strictly careful what horses they condemn, and also how they bestow useless keep

and treatment on others that are incurable ; circumstances which can only be obviated by a strict attention to those symptoms which, if properly understood and properly attended to for a sufficient time, may allow the horse an opportunity of recovering. In order to enable those who may be disposed the better to comprehend the subject, I shall divide the symptoms which constitute Glanders into two classes, beginning with those which are confined to the head.

SECT. I.

Glanders when confined to the mucous membrane lining the nose and cavities of the Head.

WHEN the symptoms of Glanders are wholly confined to the membrane of the nostrils and cavities of the head, it is most frequently the effect of badly-treated or neglected cases of Strangles or Colds, in the common or Epizootic form ; and as a consequence, the whole system has been brought into a more or less unhealthy and debilitated state ; and as the lungs are also sometimes diseased, it has given rise to such various opinions being advanced concerning the parts truly affected in Glanders ;

some persons contending that it originated in the head, and others that it originated in the lungs; M. La Fosse entertaining the former, and M. Solleysel the latter opinion. The idea of the disease being situated in the head, in all probability led M. La Fosse to recommend the use of the trephine and injections with a view to cure Glanders; nevertheless, this plan failed, from the real cause not being removed, viz., the unhealthy state of the system; with which he does not in any way appear to have been acquainted. Under such circumstances, any kind of local treatment will avail but little; and whatever is effected, must be by acting on the entire system; which when brought into a healthy state by proper remedies, the discharge and diseased state of the membrane of the nostrils will soon assume a more healthy appearance, and ultimately recover its former state, and this without any local treatment, either in the form of injection, or otherwise. These slight cases of Glanders have been known to recover without any medical treatment whatever being adopted, excepting that of keeping the part clean, feeding the animal well, only moderately working him, and avoiding further exposure to the cause or causes which first produced the appearances. Symptoms of unhealthy disease, similar in appearance to those which constitute Glanders, may also

occur in unhealthy animals in consequence of injuries to the bones of the face, as kicks, blows, &c.

SECTION II.

Glanders, when the Head and the Lungs are both diseased.

Under the complicated forms of diseased appearances in Glanders, I include all the various affections of the lungs, as tubercles, vomicae, &c., as well as those of the membrane of the nostrils and cavities of the head. This is the worst form of Glanders, and generally arises either from Strangles, Colds in the common or Epizootic form, or from Acute or Chronic inflammation of the substance of the lungs; of which it is not uncommonly the effect; and may with propriety be called consumption of the lungs of the horse. But although the lungs are sometimes diseased in Glanders, it must not be supposed that it is equally so in all cases, for sometimes the appearances of disease are very slight, and tubercles only to be observed.

It has been stated, that horses never recover from Glanders when they have tubercles in the lungs, and that it has often happened, that when

the horse has been destroyed, after being under treatment several months, that one or two very small ones have been found in the lungs, just sufficient to prove the fact of their existence, and they have been consequently considered as the sole cause of the animal's not recovering. On inquiry, however, it has been always found that the medicines administered were improperly and injudiciously given, and were the principal means of destroying the appetite and condition of the animal; when, if an opposite mode of treatment had been adopted, in all probability the animal would have recovered. Similar results have also followed the bad treatment of young horses, in which there has not been the least trace of disease of the lungs, and very little if any of the membrane of the head. But in those cases where a proper mode of treatment has been resorted to, and where the membrane of the nostrils and cavities of the head was highly diseased, and the lungs also suspected to be slightly so, the animals have to all appearance completely recovered, and afterwards performed a great deal of work without any of the symptoms re-appearing.

As to tubercles, therefore, being the cause of Glanders, and of the animal's not being able to keep up his condition under slight disease of the lungs, I consider to be an erroneous opinion, and one that is not worth further investigation; for organic

disease of the lungs, like various other parts of the body, will always be found to injure the health of the animal, just in proportion to the degree of injury to which the tubercular disease of the lungs is found to extend; and I may advance in support of this, that we may frequently see the lungs of sheep, and even lambs, affected with numerous small chronic tubercles in the cellular texture when killed, and at the same time apparently in the highest state of condition.

CHAPTER XI.

REMARKS ON THE SYMPTOMS AND DISEASED APPEARANCES
IN THE TWO DIVISIONS OF GLANDERS.

HAVING stated under separate heads the symptoms of disease in the living animal, and also the appearances of the diseased parts in Glandered horses which are observable after death, I shall proceed to describe, and endeavour to prove, their real nature and cause, occasionally reverting to those symptoms and appearances so indefinitely termed Glanders.

In the first chapter I have stated Glanders to be nothing more than symptoms of unhealthy disease, weak inflammation, and that these only occur from the whole system being in an unhealthy and debilitated state; and I have moreover endeavoured to show, in the subsequent chapters on Strangles, Colds, Inflammation of the lungs, &c., that the symptoms of disease in the horse, called Glanders, are nothing more than the latter stages of those diseases, and that to constitute Glanders it is only necessary to have a train of unhealthy symptoms in particular parts, as the mucous membrane of the nostrils with a discharge, either with or without an enlarged and diseased state of the

sub-maxillary lymphatic glands ; and on the contrary, that when these symptoms of disease assumed a more or less healthy appearance, and the discharge was not of an infectious character, that they were then only considered as acquired or common diseases ; and termed Strangles, Colds, &c. ; and that in consequence of their assuming another train of diseased symptoms, they have hitherto been classed under the indefinite term Glanders ; and although we have Glanders following the Strangles, Colds, Inflamed lungs, &c., no one that I am aware of has yet defined the nature and cause of these different changes of disease, unless it be that of attributing it to a poison in the blood.

Mr. Blaine, in treating on Glanders, says, “ the philosopher’s stone was scarcely sought for more earnestly by the ancients than a cure for the Glanders by the moderns,—by modern Veterinarians at least ;” * and further, “ That a cure may, however, be discovered for this *specific poison* there is no reason from analogy to despair, but, on the contrary, much reason to hope ; nevertheless, one consideration, not usually taken into account, would probably much lessen the value of such a discovery, which is, that it does not appear to be the Glanders as it affects the head that destroys the animal, but as it diseases the lungs.”

* Outlines of the Veterinary Art : p. 461. Third Edition.

Now I very much regret being compelled to say, that it is the imaginary idea of a *specific poison*, and discovery of its *antidote*, that has been a powerful bar to the advancement of Veterinary science, and one great reason of practitioners losing sight of the real nature and cause of the symptoms of disease; for although they have found the matter which is discharged from the diseased parts in many instances infectious, they do not appear to have been aware that it depended on the *unhealthy* state of the animal's whole system, and in consequence they have been at work tooth and nail to discover a specific remedy, apparently forgetting to consider that all the alterations of the structure of the membrane of the wind-pipe (or trachea) and cellular substance of the lungs, in which there is commonly a greater or less degree of disorganization, as ulceration of the membrane, tubercles, vomicae, hepatization, &c., are the effects of inflammation, and produced by the irritable state of the animal, particularly when in a highly domesticated state, from food, cloathing, air, exercise, change of temperature, &c., and that these are, in nearly every instance, liable to render the whole animal system unhealthy, and at the same time produce organic disease in all its varieties, and the oftener the animal is affected the more unhealthy and weaker he becomes, and the less likely to recover, when alteration of structure has occurred.

From the experience, therefore, which I have had in Glanders, it appears to me, that the greater number of cases, but particularly such as are described under the first divisions, are the latter stages of badly treated or long neglected cases of Strangles, Colds, &c. For when a horse becomes affected with what is commonly termed a violent cold, that is, inflammation of the mucous membrane of the nostrils and air passages, followed by a discharge of healthy matter or pus from the former, with loss of appetite, and a general debility of the system, (in most instances occurring from sudden change of temperature, long exposure to wet, cold, &c.) and when, instead of the owner paying proper attention to the horse, by which he would soon recover, he is still forced to work, until at last he becomes so much injured, and his appetite so bad, that an unhealthy state of the system, direct debility, Glanders and Farcy, is very frequently the sequel. But on the contrary, if the animal is kept from work while labouring under these affections, and those “curses of good horse flesh” but very cautiously resorted to—*viz.*, repeated *blood-lettings*, *strong physic*, and *diuretic medicines*, the direct debility which such treatment is almost certain to produce may be prevented. Solleysel appears to have been perfectly aware that the symptoms of disease which constitute Glanders, frequently occurred from the improper treatment

of Strangles, Colds, &c., although this fact appears to have been entirely unheeded by modern Veterinarians. While treating on Glanders he observes, " 'Tis a most certain Rule, that a Horse should never be *Purged* while he voids matter at the *Nose*; for a *Purging* Medicine may throw him into this Distemper, tho' he were free of it before. We must follow Nature in the Cure of Diseases, and not compel her to change her course, or to submit to one that is opposite to that which she has already taken, as *Purgation* is in the present case. 'Tis true, most Farriers observe that Method, but I'm fully convinced that 'tis very dangerous, and oftentimes fatal."*

These remarks, which are founded on facts, ought to be strictly attended to, and never lost sight of by those practitioners who value their reputation, and feel a true interest for their employers. They will find that, by carefully pursuing a moderate system of treatment, such as the use of gentle tonic alterative medicines, and allowing the animal proper rest, that many valuable horses might be recovered, and thus saved from those destructive appearances called Glanders.

The first division of Glanders, for want of a better name, I shall at present denominate, *unhealthy nasal flux*. This form is sometimes found

* "Compleat Horseman : " Part II., Chap. 11, Sect. 1, p. 30.

to degenerate into that described in the second, or complicated form, which is in consequence of the lungs becoming inflamed and diseased from the predisposed state of the animal, as well as from a variety of other causes, as sudden increase of temperature, violent exertion, &c., and not by *an animal poison attacking the parts*, as Messrs. Coleman, Blaine, and others have asserted.

The symptoms termed Glanders is most frequently found to occur, in the more complicated form, from primary Acute, and Chronic inflammation of the lungs, generally brought on by violent or long continued exertion, increase of temperature, &c., which produces more or less alteration of structure or disorganization of the lungs, though not preceded, as in the former instance, by Strangles, Common Colds, &c. Glanders may therefore occur in two ways: 1st, from violent or long continued inflammation of the membrane which lines the nostrils and cavities, the result of Common Colds, &c.; and 2ndly, from violent primary inflammation of the substance of the lungs, which produces tubercles, vomicæ, &c., and ultimately similar symptoms of unhealthy disease. In the former instance the inflammation of the membrane of the nostrils and cavities may extend to the substance of the lungs; and in the latter the inflammation of the lungs to the mucous membrane of the nostrils and cavities.

CHAPTER XII.

REMARKS ON GLANDERS AS APPEARING INDEPENDENT OF
SUCH INFLAMMATORY DISEASES AS STRANGLES, COLDS,
INFLAMMATION OF THE LUNGS, &c.

AFTER having endeavoured to show that those symptoms of disease which appear in the horse, and denominated Glanders, are most commonly the latter stages of badly treated or neglected cases of Strangles, Colds, or Inflammation of the lungs, and that the effects or symptoms depended on the unhealthy state of the system, and a greater or less alteration in the structure of such parts as were affected, viz., the membrane of the nostrils, the substance of the lungs, &c., I now come to consider those symptoms of disease called Glanders, and which are likewise found to follow, but not immediately after, such diseases as have been already named,—as Strangles, Colds, Inflammation of the lungs, &c. In such cases, although a state of debility and disorganization has taken place, the animal may not exhibit the symptoms of Glanders directly; yet from the state of debility into which the system has consequently been brought, the animal is rendered more predisposed to assume the unhealthy symptoms on the applica-

tion of the slightest exciting cause, as exposure to wet, cold, undue exertion, &c., but which, however, in stronger and more vigorous animals would not be followed by any injurious effects, or immediately produce the symptoms of unhealthy disease termed Glanders. In cases of this description, an unhealthy discharge takes place directly, and without being preceded by a healthy one. This is also frequently a circumstance with horses which are not properly attended to, and not allowed sufficient time to recover their strength and condition after disease, and that have been perhaps turned out and exposed to wet and cold, or immediately taken to work, and made to undergo considerable exertion, instead of their having been properly treated. The old adage, "penny wise and pound foolish" is well applicable to this manner of treating horses; and those who, probably for the sake of economy, turn them out, had much better have kept them, in a loose box, with a sufficient quantity of corn, bran, hay, and green food.

Horses which have suffered much from several attacks of acute inflammation of the lungs, &c., in the spring and summer months, if not taken great care of for some time afterwards, are liable to become affected with those unhealthy symptoms of disease called Glanders, when the cold and wet weather of autumn and winter sets in; and again, those which have been affected and reduced

by inflammatory disease in the autumn and winter months, are also liable to take on the symptoms of Glanders when the warm weather in the spring and summer comes on. In the former instance, it arises in consequence of the system being reduced in the spring or summer, and the animal's being rendered less capable of withstanding the cold and changeable weather of the autumn and winter months; and, in the latter instance, the system has been so much reduced and debilitated in the autumn and winter, that the animal is unable to bear the change and heat of the spring and summer months. This will account for our having Glanders more frequently at the rise and fall of the year.

SECTION I.

Glanders independent of any of those inflammatory diseases already named.

In the first chapter it has been stated that disease assumes a character according to the healthy or unhealthy state of the animal, and also that where the symptoms of Glanders follow other diseases, either directly or indirectly, the symptoms in a great measure, or wholly, depended upon the unhealthy state into which the system had been

previously brought, and that they were not produced, as generally supposed, by a *poison contained in the blood*.

I shall now endeavour to explain the reason of those symptoms of disease called Glanders, which are found to occur entirely independent of other inflammatory diseases. It is a well-known fact, that if animals are kept for some time in a close and confined situation, they very soon become unhealthy, and in a more or less debilitated state, in consequence of the impureness of the air; and the same effects frequently happen when they are worked too hard, or very badly fed.

Similar effects are also produced when horses undergo any sudden change, either in temperature, food, clothing, or exercise. In such cases the whole system is very rapidly reduced and debilitated, and those unhealthy symptoms which constitute Glanders soon follow, and without being preceded by any healthy disease. In these instances, from the whole system being in an unhealthy state, and, as a matter of course under these circumstances, not capable of assuming a healthy inflammatory disease, but on the contrary an unhealthy one, at the same time exhibiting symptoms which, when they appear with a discharge from the nostrils, constitute Glanders, and when with small abscesses and ulcers in the skin, Farcy.

There are various degrees of unhealthy appearances of certain parts which constitute Glanders or Farcy, whether the symptoms follow healthy disease, or occur independent of it; and this is apparently the reason why persons have been so much at a loss, and of their describing so many different sorts of disease, and also of the introduction of the terms *bordering on*, *approaching to*, or *suspected* Glanders or Farcy, and likewise of the term SPECIFIC.* Now the word *specific* means, plainly speaking, peculiar; and it has been used most extensively as a hood-wink for ignorance; and hence we have in constant use in Veterinary practice, *Specific Grease*, *Specific Mange*, *Specific Ophthalmia*, *Specific Glanders*, *Specific Farcy*, and I cannot now enumerate how many other *Specific* diseases.

* "There is no medicine in the world," says Osmer, "that can properly be said to contain any specifick quality, but when we know not how to account for the effects or modes of operation in any medicine, we, to keep up the shew of knowledge, and to gratify our own pride, have recourse to hard words, or terms of art, that serve in reality to betray our ignorance."—*A Treatise on the Diseases and Lameness of Horses*, by W. Osmer. 1761, p. 190-1.

PART II.

CHAPTER I.

NATURE OF FARCY IN CONNEXION WITH GLANDERS, WHEN FOLLOWING COMMON INFLAMMATORY DISEASES, AS STRANGLES, COMMON COLDS, DISTEMPER, INFLAMMATION OF THE LUNGS, &c., AND WHEN IT OCCURS INDEPENDENT OF THOSE DISEASES.

IN most of those cases where the symptoms which constitute Glanders follow the Strangles, Common Colds, Distemper, (or Epizootic disease,) Inflammation of the Lungs, &c.; and also when these symptoms occur without immediately following such diseases, there is great probability also of Farcy symptoms appearing. And the knowledge of this fact is not modern; for I now find that M. Solleysel was acquainted with it, and likewise with that of Glanders occurring after Farcy; for, in treating of Glanders, he remarks that, “If while the Horse is under Cure, you observe any *Knots* of the *Farcin* to break forth upon his body, though they may be easily cured, and the *Farcin* be not malignant, yet the horse will never recover.”*

* Solleysel, Part II., Chap. 12, Sect. 8, p. 37.

And he further remarks that, “there is a great affinity between the *Glanders* and *Farcin*; and the latter, when 'tis past Remedy, degenerates into the former, which, in that case, is absolutely incurable.”* As far as regards this fact, then, of Farcy following Glanders, and the reverse, I entirely agree with M. Solleysel; but I cannot do so, either with him or Mr. Coleman, in allowing that all the disease and alteration of structure which takes place, is the effect of a *poison* contained in the blood. M. Solleysel goes on to state, that “Van Helmont says, that the *French Pox* had its Original from the *Farcin* in Horses; and 'tis generally agreed, that in the Cure of that Distemper, the Malignity of its Poison must be destroy'd, and the Blood afterwards purify'd and rectify'd; after which all the Symptoms disappear. The same may be applied to the *Farcin*. When the *Farcin* is inveterate, or of long continuance, the Blood being utterly corrupted by the Poison that is lodged in it, acquires so virulent an Acrimony, that it ulcerates the *Lungs* or the *Liver* by its excessive Heat and Malignity.”† M. Solleysel also goes still further, and attempts to describe the nature of the Farcy poison, upon which, however, I shall not comment until I come to describe the infectious properties of Farcy and Glanders.

* Solleysel, Part II., Chap. 13, Sect. 7, p. 36.

† Ibid., Part II., Chap. 77, Sect. 1, p. 225.

Why an infectious ulceration of the skin, termed Farcy, should follow that state of the membrane of the nostrils called Glanders, has particularly occupied the attention of Veterinary Surgeons; and it has been generally considered and admitted that *a poison* in the blood was the cause. But they appear to have lost sight of the fact, that when Farcy occurs after Glanders, and more particularly Glanders in the complicated form, where there is considerable alteration in structure of the internal organs, viz., tubercles, vomicæ, &c., of the lungs, that the whole system has become *debilitated* and *unhealthy* in consequence, as well as from the causes which produced such alterations; otherwise they would not have been at such a loss to discover why such an unhealthy affection of the skin as that called Farcy should take place, nor why an unhealthy appearance of the membrane of the nostrils should also occur, if they had taken this circumstance into consideration—that the whole system is in an *unhealthy* state, and that, consequently, we are not at all likely to find a healthy state of ulceration or discharge in one part, with unhealthy appearances in other parts of the body; for every part of an animal which is diseased will be found to assume an appearance according with the state of the system, and in Glanders, the ulcers in the nasal membrane will have a corresponding unhealthy appearance to

those of the skin, and the reverse ; both the discharges from these diseased parts being equally infectious in character, although not, in my opinion, in consequence of its containing any *particular poison* ; but wholly from the blood ; the other fluids, as well as the solids, being changed from a healthy to an unhealthy state.

All the causes, therefore, which will in any way further tend to debilitate an animal, will invariably cause the ulcers, both in Glanders and Farcy, to become still more unhealthy—to get larger by gradually extending ; and in those cases which may not have assumed the true ulcerated appearance of Glanders and Farcy, and where such injudicious means have been resorted to, as large and repeated blood-lettings, strong physic, and diuretic medicines, they very quickly become so ; while, on the contrary, in such cases as are recoverable either before or after they assume the true character of Glanders and Farcy, all those causes which tend to promote the health and strength of the animal will have the effect of causing the discharge to appear of a more healthy character, the ulcers to cicatrise, and the animal ultimately to recover.

CHAPTER II.

NATURE AND PROGRESS, SYMPTOMS AND TERMINATION
OF DROPSY, (ANASARCA OR ŒDEMA,) GREASE, INJURIES
OF THE SKIN, MUSCLES, TENDONS, LIGAMENTS, &c.
ENDING IN OR FOLLOWED BY FARCY AND GLANDERS.

DROPSY of the skin and cellular membrane in the horse's, as well as in other animals, appears under a general and local form,* the former of which is most frequently found connected with the diseases of the mucous membrane of the air passages and lungs, as Strangles and Colds, either in the common or Epizootic form, and the latter stages of Acute and Sub-acute inflammation of the lungs; while local dropsy more commonly follows Grease or Injuries.

General and local dropsy both consist in a deposit of serum or water in the cellular texture underneath the skin, depending in nearly every instance on general or local debility. General dropsy also occasionally follows other diseases, and

* When all the extremities are enlarged, and occasionally with other parts of the body, as the head, sheath, under part of the belly, &c., the term general dropsy has been adopted when one or two extremities are only affected, locally or partially.

occurs from various causes when the system is debilitated, and when there is no other particular disease existing.

SECTION I.

General Dropsy occurring with diseases of the Air Passages and Lungs, as Strangles, Common Colds, Distemper, &c.

Dropsy of the extremities very frequently occurs in these diseases, particularly in the Distemper (or Epizootic form of cold,) it is commonly called swelling of the legs, and sometimes Water Farcy. It arises in consequence of the debility of the system, and languid state of the circulation; having become so from the causes which produced the original disease, and which it follows; it is not, therefore, as frequently supposed, a primary disease *caused by the humours in the blood.*

General dropsy takes place sometimes at the commencement of these diseases notwithstanding the best mode of practice is pursued; but it too frequently happens from bad and injudicious treatment, and is too often found to follow immediately after large and repeated blood-lettings, and the abuse of purging and diuretic medicines; and not unfre-

quently, when given under the direction of such persons as ought to know better.* General dropsy may appear either at the early or latter stages of these diseases, and if instead of keeping the body moderately loose, and exhibiting gentle tonic medicines, &c., these practitioners continue to bleed freely, and *throw in* their diuretics, under the ignorant plea of exciting the kidneys into a greater action, and the absorbents to remove the watery parts of the blood, they show a want of knowledge of the original cause of the disease, and by their bad treatment render the whole mass of blood, (already too much of a watery nature,) still weaker. By a further continuance of the bleeding and diuretics, they may easily for a short time lessen the quantity of blood in the system, and render the dropsical enlargements a little less, but as the blood becomes more watery or serous, the swellings get larger, and if this practice is carried still farther, the animal either dies in consequence, or becomes

* “Again, when horses have cold œdematous swellings in the extreme parts, occasioned by the impoverished state of the blood and juices, or bad usage, the custom is to purge away, dose after dose, without knowing, that by such continued purging, they are doing harm; for the use of purges will render the blood and juices thinner, so that these swellings will be increased rather than removed, unless some proper warm medicines are given between whiles, to amend the state of the blood.”—Page 167, *Treatise on the Diseases and Lameness of Horses*. By W. Osmer. 1761.

Glandered and Farcied, and then dies. I have even under these circumstances heard it asserted by practitioners, that the horse must have taken the Glanders or Farcy from another, apparently ignorant that their own bad practice of reducing the system was the cause of the animal's death.

SECTION II.

General Dropsy followed by Farcy and Glanders, without being preceded by any other disease.

This form of Dropsy* mostly occurs at two particular seasons of the year, spring and autumn, and is very frequently the forerunner of Farcy and Glanders. When it occurs in the spring it is generally in those animals whose systems have been previously reduced during the autumn and winter, and when in the autumn, in such as have been weakened, and rendered unhealthy by various causes during the preceding spring or summer. General dropsy is most frequently subsequent to sub-acute inflammation, and liable to arise from a variety of causes. It occasionally appears after copious bleeding or purging, or from a too free use

* When this disease disappears without *unhealthy* ulcers forming, it is what is termed *Water Farcy* by Farriers.

of diuretics, likewise from feeding with mow-burnt or musty hay, kiln dried, musty or heated oats, badly ventilated stables, excess of cloathing, bad water, want of proper exercise, or from too high as well as too low feeding.

Some persons are very fond of bleeding and purging their horses copiously and frequently, and of giving them diuretics, and they are not satisfied until these produce the most violent effects ; hence, from the debility which follows, arises dropsy and its consequences.

In dropsy, or swelling of the legs, occurring from debility, the old practitioners were in the habit of giving cordial tonic medicines, a very judicious plan ; but it appears to have been nearly superseded by the modern and injudicious use of bleeding, purging, and diuretics, under an idea of cordial tonics being of little or no utility, and only to be considered on a par with drams ; but whether they deserve this comparison or not, I contend that where one case of dropsy recovers from the use of diuretics, twenty would do so, and be prevented from running into Glanders and Farcy, by a proper use of cordial tonics in a way I shall hereafter lay down.* It is most certainly true, that diuretics can

* The administration of these medicines must of course be varied according to the season of the year. In the spring and summer they require to be given with greater caution, and in less quantity, than in the autumn and winter.

be compounded at a much less price than cordials, but when the life of so valuable an animal as that of the horse is at stake, this ought not to be, though I am sorry to say I believe it is too frequently, a matter of consideration.

Some of the cases of general dropsy occurring in the spring, which is often followed by Farcy and Glanders, may be attributed to letting horses get out of condition from bad feeding, over work, and want of proper cloathing, &c., during the autumn and winter, as well as from turning them out to straw-yards, when, perhaps, they have been the whole of the previous spring and summer, and even for years before, in a warm stable, well fed and cloathed. From such sudden changes, who, in the name of common sense, could expect any thing less than to find their horses weak, debilitated, in an unhealthy state, altogether out of condition, and frequently Farcied or Glandered. It has been stated, on the contrary, that sudden changes of temperature cannot be the cause of Farcy and Glanders, for that they depend upon a *poison* in the blood, and that horses in forests, commons, &c., which are very little, if at all domesticated, yet badly fed, and much exposed to wet and cold, seldom become Farcied and Glandered. In reply to this I may observe, that foresters, &c., frequently become dropsical; and the reason of their not being so often found Glandered, is, that the former, being less accustomed to such a kind of treatment,

feel the shock or change more severely than the latter, and the system is consequently rendered more unhealthy than in those animals which are foaled and constantly exposed to the variableness of the seasons.

But suppose we reverse this, and take animals from commons, &c., and suddenly place them in close stables, under warm cloathing, and high feed, and see what the consequences would then be ;—very frequently general dropsy, followed by Glanders and Farcy. Thus horses taken from pasture are equally liable to become affected with the unhealthy symptoms of disease called Glanders and Farcy, as those which are turned out from stables, and heedlessly exposed. Horses, therefore, which are turned out, whether in summer or winter, should have a proper place to shelter them in wet weather, and more particularly in winter; and at all times a proper quantity of corn, and hay if required; as in wet summers the grass contains but a small portion of nutriment, by no means sufficient to support and keep them in proper condition, and free from disease. Particular attention ought also to be paid to taking them up from pasture in the autumn; by no means allowing them to remain out after the grass begins to loose its nutrition, and the weather becomes cold; though, perhaps, the best way would be not to turn them out at all, but adopt some such plan of

treatment as that which has been laid down in a series of articles that appeared in the *Sporting Magazine*, by a well known writer, NIMROD, under the title of "Condition," wherein he recommends the use of loose boxes and hard meat, with a due portion of green food. I am confident that there are more horses rendered dropsical, (œdematous,) Farciéd and Glandered, than many people imagine, by injudiciously turning them out to grass, or into straw yards, especially in wet seasons, and after their having been in a stable, and kept on hard meat perhaps for years before. If such horses do not directly become Farciéd or Glandered, they very frequently fall into a weak, sickly, and predisposed state to become diseased, as with acute and sub-acute inflammation of the lungs, &c., liable to terminate in tubercles, general dropsy, or Farcy and Glanders.

Post and stage horses are particularly liable to dropsy of the extremities, and to its speedily ending in Farcy and Glanders, both in the spring and autumn; the more so if for some time previously they have been worked very hard, and highly fed. Many cases of this description depend on what is termed a general *break up*; autumn and spring, being always the most critical seasons with most animals.

General dropsy, followed by Farcy alone, or conjointly with Glanders, or Glanders and Farcy

without dropsy, most frequently occur amongst the horses of coal merchants, brewers, and stage and post masters, though occasionally with others, even when the greatest care is taken of them; and they are especially susceptible in the autumn, when the change in their coats takes place, by becoming thicker and longer, in order to resist the inclemency of winter. During this change, the blood-vessels of the skin are in a state of increased action, by which they promote the growth of the hair. Hence it happens that all horses at this time are duller, weaker, more chilly, sweat sooner and more profusely, and purge much easier than at any other season. Horses, therefore, require more careful treatment; they should have an additional quantity of corn allowed them, with a portion of beans, and if any slight swelling appears about their legs, they ought to have tonic stimulating medicines, so as to increase their appetite and strength; carefully avoiding all purging and diuretics, as they invariably tend to make the animal more languid and weaker, as well as more liable to assume an unhealthy diseased action, particularly in the form of Farcy and Glanders.

Exposing the animal to cold and rain, at any part of the year, but especially in autumn, washing the surface of his body with cold water when he is heated, or exposing him to a direct current of air, will sometimes produce general dropsy, and that

train of unhealthy symptoms of disease of the skin called Farcy, and of the membrane of the nostrils called Glanders, similar to those unhealthy symptoms which are found to follow healthy disease, when improperly treated or neglected.

SECTION III.

General Dropsy followed by Grease, Farcy and Glanders.

When general dropsy occurs from any of the causes which we have already enumerated, it is often the forerunner of that disease of the skin of the extremities, especially the hinder ones, which, from the particular appearance of the discharge, is called Grease. General dropsy is also a consequence of the debility of the system, on what is generally termed *being out of condition*, and may be considered as one predisposing cause of Grease, aided in the autumn and winter by the too frequent application of cold water to the extremities, when the animal is over-heated by excessive labour.

When general Dropsy is followed by Grease, the usual practice is to diminish the quantity of corn, and immediately bleed,—insert rowels,—and give purging and diuretic medicines; with a view, no

doubt, of stimulating the absorbents, in order to carry off the super-abundant watery parts of the blood.* It is true these remedies appear for a time to relieve, but it will be found they ultimately render him more debilitated, when in reality the dropsy of the extremities and the Grease become a great deal worse, and not unfrequently the animal becomes affected with Farcy and Glanders, which might easily have been prevented by judicious treatment. I particularly mean these observations to apply to cases of general dropsy, which are followed by Grease, and in which there is no internal organic disease of the lungs; for when that happens, the best mode of treatment too frequently proves of little avail.

SECTION IV.

Grease and Injuries followed by local or general Dropsy, and ending in Farcy and Glanders.

Grease generally occurs, in the local form, in the autumn and winter, when the animal is in high as

* A Dissertation on the real nature of the blood, and action of the absorbent vessels will be published shortly, containing many new views of the subject.

well as low condition. It is produced from a variety of external causes, which are liable to affect the skin of the legs,—as the too frequent application of cold water, without properly drying them after; plucking out or clipping the hair too close, in cold and wet weather. Dirt also, if allowed to accumulate, so as to produce irritation, injuries inflicted on the heels, as halter casts, &c., and improperly treated or neglected blisters. When Grease occurs from these or other causes, it is mostly attended with a local swelling, or dropsical state of one or more of the extremities. The same sort of swelling also frequently happens from contused, lacerated, or punctured wounds, and other injuries in any part of the skin, or the muscular, tendinous, or ligamentous parts, especially injuries of the pastern or hock joints. In strong and healthy animals these descriptions of swellings are best treated by moderate bleedings, rowels, and setons, purgative, and diuretic medicines; but when they occur in animals which even have a tendency towards an unhealthy state, then they will be found very injurious, and liable to produce general Dropsy, Farcy, and Glanders. With those animals, however, which are in a very unhealthy state, it will be much better to adopt a milder and more cautious plan, and carefully to consider the probable effects of the *bold* and *scientific* practice of bleeding, blistering, purging, and giving diuretics; for I

sincerely believe that these remedies, however valuable they may be in able hands, and used with sound judgment, when carried to excess, are always injurious to animals in health, and that they very frequently lay the foundation of a predisposition in the animal to exhibit symptoms of unhealthy disease in general, and particularly those denominated Farcy and Glanders. With such effects on healthy horses, what must they have on weak ones, or on those which are approaching to, if not already in an unhealthy state.

That unhealthy ulceration of the skin termed Farcy, takes place in some animals from even the slightest injury; while in others, that are more healthy, the symptoms do not appear until after repeated injuries, bad treatment, food, air, and want of an over exercise; in short, it is only when the system is in a weak and a particularly unhealthy state, that this description of swelling and ulceration is met with.

CHAPTER III.

SYMPTOMS AND APPEARANCES OF FARCY, WHETHER FOLLOWING GLANDERS, DROPSY (ANASARCA OR OEDEMA,) GREASE OR INJURIES, OR OCCURRING INDEPENDENT OF OTHER DISEASES—CHARACTER AND SIZE OF THE ABSCESSSES AND ULCERS—STATE OF THE DISCHARGE—PROGRESS OF ULCERATION—STATE OF THE LYMPHATIC VESSELS AND GLANDS.

ALMOST every description of sore to which the skin and membrane of the nostrils are liable, and that may have an uncommon discharge, have been, in some way or other, designated Farcy and Glanders, and which may account in some measure for the many supposed kinds which have been treated on by Solleysel, La Fosse, and others.

The symptoms and post mortem appearances of Glanders having been already described, I shall now proceed to explain those of Farcy, best known by small tumours sometimes suddenly appearing in the skin, and cellular membrane underneath, especially on the sides of the face, neck, trunk, the insides, and occasionally the outsides of the extremities, and without there being a dropsical enlargement of any particular part. These Farcy tumours are less numerous in some cases than in

others, and wholly confined to one part, particularly to the inside of one leg: sometimes with the lymphatic vessels enlarged, inflamed, and tender, and at others without. When these Farcy tumours occur, and the lymphatic vessels are likewise enlarged and inflamed, they present a knotty appearance, somewhat resembling so many cords running from the lips to the ears, sides of the neck, and to the chest, and from the pasterns towards the lymphatic glands, which are situated at the inside of the fore and hind legs. These enlargements of the lymphatic vessels in Farcy were considered by the old farriers as a disease of the veins, and they termed it, "the Corded Farcy," whether abscesses formed in the skin or not; thus making a distinction when it occurred without any enlargement of the lymphatic vessels.

The greater number of practitioners appear to agree in considering Farcy to depend *on a poison in the blood*, and some have informed us that the reason of the lymphatic vessels becoming inflamed and enlarged, and also of Farcy abscesses occurring, is in consequence of the *specific poison* being interrupted, or arrested in its course by the valves of these vessels,* that the valves and coats become inflamed, and that Farcy abscesses and ulcers form in the skin, as the result; but none of them have yet deigned to tell us what becomes of

* Blaine's Veterinary Outlines. 3rd Edition. Art. Farcy, p. 463.

this *specific Farcy poison* after it has thus made its escape from the body.

In some cases of Farcy, either with or without inflammation, enlargement, and tenderness of the lymphatic vessels, abscesses occur; and also where there has been a previous dropsical or œdematous state of one or more of the extremities. This is more particularly found to be the case in old and debilitated horses, when they get into an unhealthy state, and are much out of condition; as well as in others in which dropsy has occurred from any of the various causes enumerated in the last chapter.

When Farcy tumours appear in local, or what is more frequent, in general dropsy, they are more numerously clustered together than under any other form; (*see plate 3*;) and when ulceration takes place, a considerable portion of the skin of the extremities is destroyed, previous to the abscesses suppurating. They appear like small, hard, tender lumps in the skin, cellular membrane, and sometimes in the muscular parts; they generally become larger and softer as they proceed to suppuration, ulceration, &c., and discharge a matter which with the ulcers presents a particularly pale, yellowish white, or dark coloured unhealthy character, very unlike the red and healthy appearance of common sores; these either remain in an indolent state, or gradually extend, discharging at times a small quantity of unhealthy matter. It is occasionally found, when local remedies are ap-

plied to Farcy ulcers, after they have been for some time in a sluggish and unhealthy state, that, at last, though with great difficulty, through the use of caustic applications, they dry up, and appear healed. Topical remedies are not proper and effectual means for curing Farcy ulcers, as almost immediately after, fresh abscesses and ulcers appear, and, in many instances, even more numerous than before.

Farcy ulcers sometimes have a tendency to granulate and heal without any external application; but, it must be observed, the granulations, like the ulcers, are mostly of an unhealthy character; healing with great difficulty, and even ineffectually, until proper remedies, and such as will rouse and invigorate the system, are applied and skilfully administered. The lymphatic glands of the neck, inside and upper part of the fore and hind legs, as well as the sub-maxillary, are very often inflamed, enlarged, and tender, and ultimately become hard or scirrhus, and without at all proceeding to suppuration; an occurrence not unfrequent in healthy animals when these glands are inflamed.

M. Solleysel in his “Compleat Horseman,” has given us the following description of Farcy: he says:—

“Some reckon up *seven*, and others *eight* Sorts of this Distemper; but I shall only divide it into *four* kinds, to which all the rest may be reduc’d.

“*The Flying Farcin*.—This kind of *Farcin* is known by

certain *Knots* that are spread over the whole body, appearing sometimes in one place, and sometimes in another; and resembling the little swellings called *Corns* in men. 'Tis called the *Flying Farcin*, because it quickly over-runs those parts that seem'd not to be infected with it before. 'Tis easily cur'd, because it has not a fixt Seat or Rest in the *Emunctories*."

"*The Corded Farcin.*—The second sort of *Farcin* is accompany'd with hard Swellings, resembling the *Ropes* or *Strings* that run between the Flesh and the Skin along the *Veins*, especially those of the *Thighs*, *Neck*, and *Brisket*, and along the *Belly*. These *Cords* are beset with Tumours or *Knots*, which break forth into *Ulcers*, and cast out Matter: and the *Colour* of these *Ulcers* is different, according to the Variety of the corrupted Humours.

"If the *Blood* predominate they are Red; if it degenerate into *Choler*, by reason of the Defect of the *Liver*, in separating the *Bile* from the Mass of Humours, they appear *yellow*, if *Flegm* abound, they are *white*, and if there be a Redundancy of burnt, black, and *melancholic* Humours, they are of a *blackish* Colour, which is the most dangerous of all the four cases."

"*The Farcin resembling a Hen's Fundament.*—This is a very dangerous *Farcin*, and difficult to be cur'd. 'Tis known by great Tumours or *Bunches*, which break the skin without voiding any Matter. The Lips of the Ulcer are almost always callous and foul, and of a reddish black colour, which is a sign of burnt and melancholic Blood. It takes its Name from the Resemblance of its Figure."

"*The Internal Farcin.*—In this Kind the *Knots* are seated between the Flesh and the Skin, without any visible external Swelling; they resemble *Corns*, and fasten the Flesh to the Skin. If the Cure be not timely begun, the Disease enters in the Body, and infecting the inward Parts, kills the Horse. Sometimes the *Knots* are fasten'd to the inside of the Skin only, and are not rooted in the Flesh; they appear usually on the fore-part of the Breast, and are very easily cur'd."

CHAPTER IV.

POST MORTEM APPEARANCES IN FARCY, UNDER ALL CIRCUMSTANCES — DIVISION OF THE APPEARANCES ACCORDING TO THE PARTS AFFECTED, *1st*, WHEN CONFINED TO THE SKIN ALONE ;—*2dly*, TO THE SKIN AND MEMBRANE OF THE NOSE AND CAVITIES ;—*3dly*, TO THE SKIN AND LUNGS ;—*4thly*, TO THE SKIN, NASAL MEMBRANE, &c. AND LUNGS.

WHEN Farcied horses, whether in conjunction with Glanders or not, are destroyed, and their carcasses examined, they generally exhibit appearances nearly similar to those found in Glanders, and which have been already described, *viz.*, tubercles, hepatization, &c., of the lungs. In the first division of Farcy when it is confined to the skin, there are some cases met with, where no alteration of structure in the interior of the body is to be seen, and then only with this difference, that all the organs are of a paler colour, and weaker in texture than in animals which are destroyed in a healthy state. I have seen a great many such cases after death, which has convinced me that very many valuable horses are destroyed, so slightly Farcied, that neither in the inside nor outside of the body can any disease whatever be traced, excepting perhaps

half a dozen or a dozen ulcers in the skin, and without the slightest appearance of dropsy. I well remember a remarkable case of this description, that I met with at the slaughter-house, in a six-year old very valuable young draught horse, which had been destroyed under the above circumstances. This horse had only a few *unhealthy* sores in the skin, produced, in all probability, by the perspiration being suddenly checked, from exposure to cold or wet; a case which I am fully confident might have been very soon recovered by a judicious mode of treatment; as tonic medicines, proper attention, good food, air, and exercise. It is this description of case, as well as many others, even where the skin has been far more extensively diseased, that I have found curable by proper care and treatment.

Among the second division of cases, those in which the skin and membrane of the nostrils are both affected, which constitutes in fact Farcy and Glanders, there are likewise many that might be recovered, particularly when it occurs in young horses, and when the membrane which lines the nose is not very extensively ulcerated.

In the third division of Farcy we find the skin and lungs are both diseased; and in some instances the lungs occasionally present all the various appearances of disease which are found in Glanders, the result of repeated inflammation. The recovery of an animal thus affected will be much

more difficult and doubtful, than either of the former divisions.

The fourth division, that in which the skin, membrane of the nose and lungs are all highly diseased, constitutes Farcy and Glanders in the most complicated form ; and such cases being beyond the reach of medicine, it will be always far better to have the animal destroyed as soon as possible.

CHAPTER V.

GENERAL REMARKS ON THE NATURE OF FARCY AND GLANDERS—CONNEXION OF THE SYMPTOMS OF FARCY AND GLANDERS WITH EACH OTHER—PREDISPOSING AND EXCITING CAUSES—TREATMENT NECESSARY TO EFFECT A CURE—REMEDIES TO BE EMPLOYED, AND THEIR ACTION ON THE SYSTEM EXPLAINED.

THE symptoms of Farcy, like those of Glanders, follow different common inflammatory diseases, and also occasionally like them appear in such horses as are in an *unhealthy* state, independently, or without following such diseases. It has been likewise stated that the symptoms which constitute Farcy, as well as Glanders, depend on an unhealthy state of the system, and that it may have been brought into that state from a variety of causes. I shall now enter more fully into the subject, by examining why the symptoms have been supposed to be produced by a poison contained in the blood.

What is termed Farcy and Glanders, both in the horse and ass, is nothing more than certain symptoms which occur in particular parts of the body, when the system is in an unhealthy state. In Farcy, the skin alone is diseased, although it may be so in conjunc-

tion with the cellular membrane and lymphatic vessels ; and in Glanders either the mucous membrane of the nostrils, air passages, or lungs, are diseased, accompanied with a discharge from the mucous membrane, whether ulcerated or not.

Those symptoms of disease which constitute Farcy or Glanders may exist either separately or conjointly, and with or without the lungs or any other internal organ being diseased. I shall therefore propose they be designated *unhealthy nasal fluxes*, and when those symptoms which are termed Farcy appear, followed by abscesses and ulcers in the skin, *unhealthy cutaneous abscesses and ulcers*. The veterinary practitioner will be thus enabled to comprehend more clearly the nature of the symptoms, and not, as heretofore, to class every kind of discharge from these parts, under the general terms of Farcy and Glanders, which, like the vague and unmeaning terms of *hydrophobia* and *rabies* in the dog, have been long held as sufficient grounds by the ignorant for destroying many a valuable animal that by care and proper treatment, particularly at the commencement of disease, would no doubt have easily recovered.

As the infectious character of the discharge, or matter which flows from the parts that are diseased, both in Farcy and Glanders, depends on the blood as well as all the other parts of the body, being in an *unhealthy* state, and not, as it has been for ages

asserted, on that of a distinct poison, I shall be enabled to explain clearly the nature and character of the symptoms; having found that when the discharge is taken from the least affected of these animals, it is the less likely to be infectious; for it will be invariably found that where the system is in the most unhealthy state, the matter will be proportionately infectious. I am not aware that any one has hitherto attempted to explain the nature and appearances of Farcy and Glanders, or the infectious character of the discharges, on the principle of the *unhealthy state of the system*, or that to effect a cure it must be *gradually* recovered from that unhealthy state into a more healthy one. There are several persons who have asserted their belief in the infectious or contagious character of both Farcy and Glanders; and but few to the contrary; some contending that they were highly so, others that they were not. M. M. Solleysel* and Sainbel† maintaining the former opinion, and Mr. Thomas Smith‡ the latter, with whom I am led to agree: he expresses himself thus: “I have no wish to

* “Compleat Horseman,” by the *Sieur de Solleysel*. Hope’s translation, 1717. Part II, pages 28 and 224.

† Experiments and Observations made upon Glandered Horses. Posthumous Works of Charles Vial de Sainbel, 1797.

‡ A Treatise on Glanders, by Thomas Smith, Veterinary Surgeon to the 2nd Regiment of Dragoon Guards. 8vo. 1813. Preface, pages 8 and 9.

allure any into a fatal security, by inducing them to permit a diseased subject to remain with one that is perfectly free from it." Now I do not mean to assert that Glanders and Farcy are not contagious, but I mean to contend that they are not, nearly to that extent which is generally supposed. On such grounds persons are not warranted in condemning valuable horses, many instances of which I have known, in consequence of a poor, weak, and debilitated ass having been inoculated and infected with discharge taken from the horse, and, on the test, the animal has been pronounced to be badly glandered, and so foolishly destroyed. It ought to be clearly understood that, from asses being naturally weak-textured animals, nearly always badly fed, and highly susceptible of the slightest exciting causes, they are more liable to general irritation of the system, inflammation of the membrane of the nostrils, and that unhealthy discharge commonly called Glanders, as well as from their being much more easily acted upon by inoculation; so that appearances may be produced not only by the discharge taken from the nostrils of an unhealthy horse, but by a variety of other causes.

SECTION I.

Connexion between the symptoms of Farcy and Glanders.

Farcy and Glanders are indicated by affections of separate parts of the body, the former appearing in the skin, and the latter in the mucous membrane of the nose and air passages;* and the symptoms are found to follow various inflammatory diseases, and always to depend on the unhealthy state of the system, which are the effects of those diseases which Farcy and Glanders are found to follow, as well as from a variety of other causes.

The most general way of accounting for this by the modern Veterinarians has been, that Farcy and Glanders is one and the same disease, and that the same *poison* produces both, but that while circulating with the blood it attacks such parts of the body as are most susceptible of its action, when the membrane of the nostrils or lungs are affected, constituting Glanders, and when the skin and lymphatic vessels, Farcy. It is against this notion of

* Those readers who may be desirous of becoming thoroughly acquainted with the real nature of this membrane, and its connexion with the skin, will find a clear and concise description in Bichat's *Treatise on the Mucous Membranes*. Translated by J. Houlton, Esq. 8vo. 1821.

an imaginary poison that I so strongly protest, and fearlessly assert that the symptoms of Farcy and Glanders are the effects of well known external causes, and that when the system is brought into a debilitated and unhealthy state, those parts which are naturally the weakest and most predisposed, are consequently rendered more susceptible to the exciting causes, and the parts to which they are most powerfully applied are those which soonest become diseased. As for instance, if a horse is in an unhealthy and predisposed state, and any exciting cause acts on the skin, Farcy will be the result, and if, subsequently, to the membrane of the nostrils, a weak and unhealthy inflammation termed Glanders may follow; and so on the reverse, if the cause first act on the membrane of the nostrils, producing symptoms of disease, and ultimately on the skin, similar effects will be found to follow; as thus, if a healthy animal should happen to be exposed, or driven against wind or rain, a healthy inflammation and its consequences, as the disease termed a Cold (Catarrh) will be the result, but if in an unhealthy state or improperly treated, the disease will be very liable to end in Farcy or Glanders.

SECTION II.

Predisposing and Exciting Causes of Glanders and Farcy.

Having in the progress of this work already alluded to most of the predisposing as well as the exciting causes of Glanders and Farcy, I shall only here shortly recapitulate them; alluding to such others as are of importance.

I consider those symptoms of disease termed Glanders and Farcy, both when there is slight as well as extensive disorganization, as when directly or indirectly following Strangles, Colds, Inflammation of the Lungs, Dropsy, Grease, Injuries, &c., and also when they occur in unhealthy animals independent of any of these diseases, to arise in consequence of the unhealthy state of the system; the effects of a variety of predisposing and exciting causes, to which horses in a highly domesticated state are so frequently exposed. The causes which produce Glanders or Farcy, as well as the different diseases that they are found to follow, are sudden changes of temperature, of clothing, of food, of air, and of exercise, as well as the improper treatment of diseases. Unfortunately a great many persons suppose they possess a sufficient skill and judgment to prescribe bleeding, physic, diuretics,

&c., for their horses, but they are often deceived, and generally suffer severely for their presumption. For when these remedies are too frequently or otherwise improperly administered, they become the cause of both Glanders and Farcy, equally when the animal is in health as when he is labouring under disease, by producing a general debility, as extreme as if they had become diseased from impure air, bad food, musty hay or oats, hard or excessive work, exposure to wet and cold, poor keep, &c.*

* We may perhaps be allowed here to introduce the following letter, which will show how extensive the mortality is which sometimes happens amongst horses from Glanders and Farcy, in some seasons.

“SIR,

“*April 15, 1830.*

“Having engaged to give you some information relative to Glanders, as it prevailed in the year 1826, and the beginning of 1827, the following are the particulars, as near as my memory serves me.

“The summer was dreadfully hot, with a long continuance of dry weather, without a single shower being known to occur for months; green food became so scarce that people were obliged to feed their cattle on dry meat; in the following winter the scarcity of hay and corn was unprecedented, it was also very unwholesome; I have seen out of one load of oats (twenty bags) four of them winnowed away, by the separation of small lumps of the soil, &c. This appeared to arise from the straw being so short, that the oats were literally pulled up to make the most of the straw, instead of being mown, and the consequence was, that a great deal of dirt, &c., went to market with the grain.

In addition to my own experience I shall also adduce some extracts in support of my opinions, from a valuable modern author on Glanders, Mr. Thomas Smith, and also some few others from the French writers. Smith enumerates six principal

“After the horses had been fed on this sort of food for a few months, Glanders made its appearance in the stables of many of the coach and posting establishments: within my own range of practice, I knew of the loss of nearly five hundred horses. Mr. R. Evans, of Wolverhampton, Staffordshire, lost upwards of one hundred; and it is an important fact that those horses which were in the highest condition, broke out first, and in many of them the disease was ushered in apparently by symptoms of inflammation of the lungs, and after these symptoms subsided the horses began to discharge at the nose; the sub-maxillary glands on one or both sides became enlarged, and occasionally there appeared extensive ulceration of the membrane of the nose, and Farcy was frequently the consequence; in others, the disease was so acute as to destroy the animal in forty-eight hours, from the time the inflammation within the chest commenced; this being the general precursor of Glanders.

“The disease (though highly contagious) appeared, in the generality of cases that came under my examination, (sometimes amounting to twelve or fourteen horses in the day, for weeks together,) to be generated in the system. In a great number of the post-mortem examinations I found the lungs very much tuberculated, with vomicæ and ulceration. That the disease was produced by unwholesome food in these instances, is a fact which in my mind requires no argument to substantiate.

“I am, your obliged Servant,

“R. PRITCHARD.”

“To R. Vines, Esq.,
Royal Vet. Coll.

“Wolverhampton, Staffordshire.”

causes of Glanders; 1st, General Debility;—2dly, A previous disease;—3dly, Breathing an impure air;—4thly, Exposure to a current of cold air, or being permitted to drink cold water, when hot;—5thly, A sudden transition from cold to heat, and vice versâ;—6thly, Infection.*

Among the opinions of the French writers we find ascribed, as the cause of Glanders and Farcy, “damaged provender, over-fatigue, the influence of cold and humidity; low, wet, dark habitations, *infested with currents of air, charged with effluvia from the animal matters accumulated about the door and windows of stables, the atmosphere of which is not sufficiently often renewed*, and which are situated by the side of rivers, rampart walls, garrison towns, &c.”† They also consider Glanders as “an untoward termination of Strangles, bastard-strangles, cynanche maligna, farcy, water-farcy, catarrh,”‡ &c.

I have introduced these valuable remarks for the purpose of showing that my own notions are not singular, but are borne out by many of the French practitioners, who with me, differ from the opinion of M. Dupuy. This gentleman states that Glanders is a specific disease; and not a termi-

* A Treatise on Glanders. By Thos. Smith, Veterinary Surgeon to the 2nd Dragoon Guards. 1813, page 17.

† Translation of M. Dupuy’s Work on Glanders, &c. 1817. Mr. Percivall’s Lectures, Part III, page 498.

‡ *Ibid*, page 484.

nation of strangles, bastard-strangles, cynanche maligna, farcy, water-farcy, catarrh, &c. When the lungs are affected, it is a sequel of the tuberculous disposition, and not a termination of peripneumony. On the contrary, acute or chronic peripneumonies are very often consequences of the tuberculous affection.* From the remarks of M. Dupuy, it evidently appears, that he was totally unacquainted with the real nature of tubercles, and that he was not aware of their being *cellular abscesses*, or the *effect* only of inflammation, he having distinctly stated it as his opinion, that they were the *cause*, and not the *effect* of disease. Thus, therefore, he has fallen into a great error, notwithstanding his depreciation of all preceding writers, from the time of Aristotle down to that of his own.

M. Dupuy has also stated, that “two leading hypotheses are discoverable (in these works);” alluding to all preceding writers; “the one attributing glanders to an acrimony circulating in the blood; to which account they lay all disorders that may supervene upon it. The partisans of this proofless supposition imagine that they will achieve a cure if they can but manage to eliminate or expel this pretended morbidic humour, to the fulfilment of which grand desideratum every remedy employed is directed. According to the second

* *Ibid.* page 484.

supposition, glanders is viewed as a local affection, attacking the mucous membrane of the nose. Those who have adopted this opinion employ fumigations, and trepan the frontal and maxillary sinuses.

“ Moreover, they have invented instruments to conduct these vapours and fumigations into the different windings of the nasal cavities, with the intention of locally affecting and bathing the diseased parts, and in the end of cicatrizing the chancres by vapours charged with medicinal exhalations ; but unfortunately, all these means, whose combinations appear so happy, have not been followed by the anticipated success. It certainly is surprising to one who has attentively perused the different works on glanders, from the time of Aristotle to the present, *that he has met with nothing but a multiformity of suppositions, and not one author who has busied himself about the NATURE of this mortal malady.* They have all disregarded this important part of pathology.” *

Now I consider M. Dupuy nearly in the same situation as those writers whom he condemns, for he describes Glanders and Farcy, with many other diseases, as the result of hereditary tuberculous affection, and asserts that tubercles are “ *the effect of an unknown cause,*” that the only means of era-

* *Ibid.* pages 492-3.

dicating this disposition in animals, is to couple and cross with such breeds as are well known to inherit the least disposition towards tubercular disease. In the latter notion I perfectly coincide with him, as it is a point of considerable importance ; but after all, it will avail but little or nothing unless the animals are so treated as to be secured from all the various predisposing and exciting causes which tend to produce Glanders and Farcy, and when they labour under those inflammatory diseases which these follow.

SECTION III.

Infectious or Contagious Nature of the discharge in Glanders and Farcy, with the Opinions of different Authors thereon.

In treating on Glanders or Farcy, when following Strangles, Colds, Dropsy, (Anasarca or Œdema) Grease, &c., and also when they occur independent of these, it has been stated that to constitute the proper symptoms of Glanders and Farcy, it is necessary that there should be a particularly unhealthy appearance in those parts which are diseased, as well as in the matter or discharge, before they can with propriety be termed Glanders or Farcy ;

and as these diseased appearances sometimes vary, practitioners have introduced different auxillary terms to express what they mean, as, *bordering on, suspected, or approaching to*, Glanders or Farcy.

Much has been said about the infectious or contagious* nature of both Glanders and Farcy Mr. Coleman attributes the infection or contagion to a *Specific poison in the blood*; and he also asserts that a similar poison exists in those animals where Glanders or Farcy is generated; that it is formed in the atmosphere of stables, by the secretions and excretions of the animal, and that it is a *compo* of *dung, urine, breath, and perspiration*. But in my opinion any impure air which may be thus formed, only tends to render the system debilitated and unhealthy; and that from this cause, as well as from a variety of others, the blood and fluids which are formed are rendered vitiated or unnatural, and of

* The words *contagion* and *infection* are very frequently used synonymously. By infection, as applied in the common acceptation to disease, is generally understood, those diseases which have been communicated from one animal to another through the medium of an atmosphere tainted either by respiration or exhalations from the body; and by contagion, is understood among Veterinary practitioners, such diseases as are propagated by the actual contact of matter. As we have never seen a case, and are unacquainted with an instance where Glanders or Farcy was produced, by inhaling the breath or effluvia of the body of another animal, but only by actual contact of matter, we shall, like Smith and Dupuy, use the terms synonymously.

an infectious or contagious character, and capable of producing general derangement or disease, if introduced into the system of some other animals, especially the ass, which is almost naturally predisposed to disease from bad feeding, and the weak texture of its skin. Thus far only, then, do I consider the discharge in Glanders and Farcy infectious, and not in consequence of an *independent poison in the blood*. Take, for example, Glanders and Farcy when following Colds, Injuries, &c., when it has been preceded by a healthy discharge not infectious, but which from neglect or bad management becomes so unhealthy as to constitute Glanders or Farcy. Is it not then the very height of folly to lose sight of the negligence, mal-treatment, and unhealthy state of the system which these produce, and to rest satisfied with so *idle and ridiculous* a notion as that of a *specific poison having crept into the blood*?

This *so-said poison*, like the Ether* of past ages, has hitherto been a very profitable and convenient

* Ether, the name of an *imaginary* fluid, was supposed by several of the ancient authors to be the cause of gravity, heat, light, muscular motion, sensation,—in a word, of every phenomena in nature. For instance, when any one put a question like the following, viz. :—What is the cause that sheep have sometimes horns? The ready answer was,—*Because the ETHER was sometimes so modified in its operation as to produce that effect.* Why are some sheep without horns? *Owing to another modification of the ETHER.* Why is a crow black?—*Because of the*

term to some persons ; enabling them to settle so many questions in their own way, and to their own hearts' desire, that let Glanders or Farcy, and I know not how many other diseases, occur under whatever circumstances they may,—whether in the stable, straw-yard, at grass, after great exertion, or when the system is in a deranged state, this *imaginary poison* is invariably set down as the *satanic* agent. If it is contended, that by inoculating with the matter of Glanders or Farcy, the proper symptoms are produced, and that the fact is then proved, and that a specific poison thus existed, and that *this poison*, like other poisons, is governed by

ETHER. Why is a swan white, with black feet?—*Owing to the*

ETHER. Why have fishes scales—birds wings—some animals two feet, some four, and others none?—*The causes may all be attributed to different modifications of the Ether!!* and thus, on these principles may be solved any of the most intricate problems in nature. Ether, however, must now “hide its diminished head,”—for modern intelligence has discovered a power, that if it does not surpass, may at least claim an equally potent agency with the Ether of the ancients. For were you to require an explanation of the proposition,—Why Glanders, Farcy, and some other diseases of the horse are affirmed to be caused by “an *animal poison contained in the blood*,” you would receive an equally convenient and diverting answer, as you did to your previous queries respecting the horns, crow, &c., and one quite as explanatory and satisfactory, viz., that it is formed from *dung, urine, breath, and perspiration* ; a *compo.*—an imaginary something, which “the CHEMIST CANNOT DETECT,” but which our readers may call, if they please, ETHER !

laws peculiar to itself, and that this is still further proved by introducing blood from a Glandered horse into the veins of a healthy ass, and similar symptoms produced; I am prepared to prove that *unhealthy* blood taken from an animal not Glandered will produce similar effects as blood taken from a Glandered horse.* In the course of my experiments I have produced Glanders and Farcy, with a considerable tuberculous disease of the lungs, and water in the chest, that ended in death, in the course of ten days, by introducing half a pint of blood, taken from a rabid dog, into the jugular vein of a five-year old healthy ass; and similar effects will likewise follow the introduction of any irritating fluid into the circulation, —as a solution of sulphate of copper, &c. Now

* One of the opinions of Mr. John Hunter was, that the blood never became diseased.—Mr. Coleman, however, asserts that it does in Glanders and Farcy, and lays claim to the assertion as a *discovery*; advancing as a proof the introduction of blood from a Glandered horse, into the veins of an ass, producing Glanders and Farcy. The impropriety of applying the term *disease* to a fluid not possessing organization, must I think be sufficiently apparent. Had it been stated that the blood became changed in quality, viz., from a healthy to an unhealthy state, we might then easily have accounted for its producing derangement or disease, a term which can only, properly speaking, be applied to organized textures. The above experiment with the blood of a dog labouring under Hydrophobia, will, I presume, show the fallacy of his assertion.

this clearly shows that it is the particular irritation to which the system of some animals is so susceptible, (no matter from what cause,) that produces the diseased symptoms, and that it is not the effect of a *specific* or particular *poison* contained in the blood. As a further illustration, I may advance, that I have seen Glanders, and even death produced by inoculating an ass with matter taken from an *unhealthy* animal labouring under virulent Grease.

It is no doubt from the contagious nature of the discharges in very bad cases of Glanders and Farcy,—and which I consider to depend on the *unhealthy* state of the animal, —that first led others to the idea, that when similar symptoms were produced, they always depended on a *specific poison* in the blood, and that in the treatment of such diseases it required those remedies which, by their specific effects, would combine with this supposed *specific poison*, so as to neutralise and destroy its effects. Mr. Coleman tells us that the *specific poison* which is the cause of Glanders and Farcy, “cannot be detected by the Chemist;” and M. Solleysel goes a step further, and attempts to give a description of the nature of the Farcy poison, which he also considers to be produced from a variety of causes :—he says, “For a brief Explanation of the Nature of that *Poison*, ’twill be sufficient to tell you, that ’tis a *venemous Steam*, or

certain corrupt *Spirits*, which penetrates the Parts of a Horse's Body, as the Light of the Sun passes through a Glass. These *Spirits* are a sort of *Ferment* that breeds Corruption in whatsoever part they attack. And 'tis to be observed that this poison can never be destroy'd by purgative Medicines, without the Use of *Specifics*.

"This Disease is sometimes communicated by Contagion from an infected Horse; 'tis also occasioned by eating too great a quantity of (especially new) *Oats*, or new *Hay*, before 'tis purg'd, by evaporating its superfluous Moisture, which usually happens about two Months after 'tis put up in Stacks, or in a Barn. Violent Exercise in hot Weather, and even once hard Riding, Hurts or Wounds made with a foul or Cancerous Iron Instrument, such as Spurs, Bits, &c., and the too great Abundance of Blood may also cause this Distemper. It proceeds not unfrequently from a preposterous and too hasty Diligence, in fattening tyr'd, lean, and over-heated Horses; for too great Abundance of Nourishment breeds the *Farcin*, unless it be prevented by moderate Exercise and often repeated Bleeding." *

The contagious nature of Glanders has been much doubted by some authors, and still more so

* "Compleat Horseman." By the *Sieur de SOLLEYSEL*. Hope's translation, 1717. Part II, Chap. LXXVII, Sect. 1, page 225.

that of Farcy, and amongst them are Mr. Thomas Smith,* and M. Dupuy. This seems to arise from some cases being less contagious than others, a circumstance of which the old writers appear to have been aware; for M. Saunier has asserted that amongst the different kinds of Glanders, there

* "That the effects of similar causes are generally mistaken for contagion, will appear from the presence of the disease amongst the horses employed in post-chaises, coaches, &c., where it has always been considered as the effect of contagion. But if we consider that such horses are constantly exposed to the alternate changes of heat and cold, and when almost exhausted by the exertion they are forced to make, are plunged into a river or pond, or have pail-fulls of cold water thrown over their whole body, and are afterwards exposed to a current of cold air in the yard, until they are dry, it will appear that the disease is produced without the influence of contagion. And do we not also frequently see those horses employed in stage wag-gons, when excessively heated and fatigued with dragging those huge machines, halted opposite to an inn, and remain there until they are quite torpid with cold, and when they arrive at the end of the journey, are treated with as little consideration? Consequently, some of them become diseased, and are destroyed, and the stable white-washed, and then another horse is put into the same situation, who, from being subjected to the same treatment, also becomes diseased, sooner or later, according to the violence of the exertion, the temperature of the weather, the susceptibility of the animal to the impression of the disease. Hence they have kept white-washing and shooting *ad infinitum*, having mistaken the mal-treatment of the horses for contagion."—*Treatise on Glanders. By Mr. Thos. Smith, Veterinary Surgeon to the 2nd Regiment of Dragoon Guards.* 1813. pages 43, 44.

were some that was communicated from one horse to another, at the distance of fifteen or twenty miles, an error of the grossest description, although in a great measure still credited by those who are wholly ignorant of the subject.* Many of our present practitioners believe that Glanders cannot be communicated from one animal to another, through the medium of the breath, or exhalations from the body, but that it requires the actual contact of Glandered or Farciéd matter to produce an effect. In these views, then, I perfectly coincide, never having seen a single case which could be fairly attributed to infection, through any inhalation from another horse.

In allusion to the infectious nature of Glanders, Mr. Smith, in his treatise, (page 32,) says, that he has set down infection as a cause of Glanders only from common report, supposing it to be so; that

* "For instance," says Mr. Smith, "the disease appears in a quarter where it had never been known before; a doctor is sent for, and the cause demanded: this puts him to a nonplus. Being unable to account for it on rational principles, he hesitates: to have made a candid confession of his ignorance, would have sullied his reputation, and deprived him of a customer. He, therefore, looks around him, and happily recollects that there is a glandered horse in the neighbourhood, though at a great distance, from which the wind had conveyed its dire effluvia to the subject before him: hence he is delivered from his dilemma, and the credulous owner is satisfied with the important discovery."—*Smith's Treatise on Glanders.* 1813. *Preface*, pages 10, 11.

he inoculated two horses, but in neither was the disease produced; he therefore considers that where one case proceeds from infection, ninety-nine out of a hundred are from the other causes which have been already enumerated. M. Dupuy states, "That the contagiousness of glanders yet remains an unsolved problem. That almost all veterinarians have adopted the idea of contagion; though some have advanced quite the opposite opinion. That veterinarians regard this as a part of the established doctrine; though there are many proofs to the contrary. That I know of no well-conducted experiments in favour of contagion, whereas there are some against it. That if I raise doubts about the contagiousness of glanders, it is with a view of inducing Government to order some experiments to be directed to this object." * M. Volpi, Professor of the Veterinary School at Milan, asserts that both Glanders and Farcy originate in contagion only.

The reason of the infectiousness or contagiousness of Glanders being doubted by some and not by others, appears to me to arise in consequence of each party endeavouring to support his own opinion without having properly investigated the subject; otherwise there would not be some con-

* Translation of M. Dupuy's Work on Glanders, in Mr. Percivall's Lectures. Part III, pages 483-4.

tending that infection or contagion is the sole cause,—some that it arises from a *poison* in the blood,—some that it is only a local disease,—some that it is caused wholly by sudden changes of temperature, bad food, air, &c., and others, among whom are the followers of M. Dupuy, who contend that tubercles are the sole cause, and that they multiply under the influence of wet, cold, &c. Now I find that the contagiousness, by which I mean actual contact of matter, both of Glanders and Farcy, admits of various modifications: for instance, in those animals where the system is in the most *unhealthy state*, the discharges or matter will be found of the most contagious character, and so on the reverse.

The predisposition of an animal to become affected through inoculation is also of great moment; for it will be always found that strong, healthy, and well-fed horses are by far the least susceptible of inoculation by morbid matter; while on the contrary, those animals which are but badly fed, and out of condition, especially asses,—whose textures are always weak,—are the most susceptible and liable to become affected, and generally die in about eight or ten days after inoculation.

The knowledge of this circumstance has led me to a careful description of the symptoms of Glanders, as they follow Colds, &c., and I may again state, that they are not, strictly speaking, to be

considered Glanders, until the discharge or matter from the nostrils, is capable of producing similar effects; and I wish particularly to impress on my readers that it must ever depend on the state of the animal, whether *healthy* or *unhealthy*, and whether or not he becomes Glandered or Farciéd, or exhibits those symptoms of disease which constitute them. For when an animal is weak, and approaches towards an *unhealthy* state, any of the causes which will produce inflammation, independent of Glandered and Farciéd matter, will have the effect of causing those *unhealthy* symptoms. On the predisposition therefore of animals must ever depend either his generating disease, or receiving it by inoculation; for if those predisposing and exciting causes did not exist, animals would never become affected with those symptoms of *unhealthy* disease which constitute Glanders and Farcy, and consequently they would be unknown, as appears to be the case, in countries where the atmosphere is not liable to sudden variations.*

If, then, horses were not so treated as to be brought into a predisposed state, inoculation with

* "From my own experience," says M. Dupuy, "and that of my colleagues, it would appear that glanders is rare in very cold countries, and absolutely unknown in hot climates. From and about Poland to about the middle of France, glanders is frequently seen; it is not common on the other side of the Pyrenees; it is unknown in Africa. M. VUILLAUME, my colleague

morbid matter would be much less capable of producing those symptoms of disease than it is in many animals; and it is a well known fact, that there are some horses which resist disease by inoculation, and that there are others which are quickly affected. Mr. Monk, a well known horse slaughterer, in Whitechapel, has informed me, that for sixteen years he has kept a horse in a stable, generally containing a number of Glandered and Farciéd horses, but this horse has never become affected. I have also repeatedly known instances of healthy horses being stalled and fed, for a length of time, with horses which were Glandered and Farciéd, without their exhibiting any symptoms whatever of infection or disease.

and Friend, ascertained this fact during his stay at Tunis and Tangiers. M. SIMON, Veterinary Surgeon to the King of Portugal, assured him that he had not seen a glandered horse during the thirty years he had been residing in Lisbon."—*Translation of Dupuy's Work. Mr. Percivall's Lectures, Part III, pages 496-7.*

TREATMENT OF GLANDERS AND FARCY.

CHAPTER VI.

OBJECT TO BE KEPT IN VIEW WHEN MEDICINE IS GIVEN
EITHER AS A PREVENTATIVE OR CURE—BEST REMEDIES
TO BE EMPLOYED FOR THAT PURPOSE—THEIR
MODE OF ACTION ON THE SYSTEM—CHANGES WHICH
TAKE PLACE IN THE DISEASED PARTS FROM THEIR
USE.

It is my intention in this and the following chapters to point out those objects which are to be kept in view, in order to attempt or effect a cure.

At the commencement of most inflammatory diseases, excepting those in which the system is very weak, as in many cases of sub-acute inflammation, the circulation requires to be moderately reduced or lowered ; but as soon as this has been accomplished, and the inflammatory disposition checked or subdued, the time very soon arrives when the system again requires to be gradually restored to its natural tone. Similar restorative treatment to this is required for horses much out of condition, whether from predisposing or exciting causes ; for if, instead of further reducing the system by hard work and diuretic medicines, &c., an opposite course

was pursued,—that of giving tonic stimulating medicines, the discharge from the nasal membrane, as in Colds, &c., would continue healthy and quickly subside, and the dropsical swellings of the extremities gradually become diminished, as the strength of the animal returned, and those diseases would not end in Glanders and Farcy near so frequently as they do at present.

The Farriers have been much censured by modern Veterinarians, for resorting so often to the use of cordial stimulating medicines, but though, no doubt, they often go too far with them, particularly by administering them at the commencement of inflammatory diseases, they have notwithstanding found by experience, that in most cases after the inflammatory symptoms had subsided in Colds, Dropsy, &c., although they could not account, perhaps, for their mode of action, yet they knew the fact, that they were of infinite service, and tended to restore the animal. Solleysel, and many subsequent writers, were loud in the praise and use of cordial medicines.

Veterinarians of the present day are instructed to use freely diuretic medicines in Dropsy, in order that by exciting the absorbent vessels into a greater action, they may take up the watery parts of the blood: but I contend that though such a mode of treatment may for a short time diminish the enlargement of the extremities, yet from the debility

which they produce, the animal is ultimately rendered worse, the blood more serous, and the enlargement still greater.

That mode of treatment, therefore, which I am about to recommend, both as a preventative and cure for Glanders and Farcy, and especially for horses very much out of condition, are medicines of a tonic stimulating nature; and such as by their effects, conjointly with good food, air, and exercise, are capable of invigorating the whole system, and ultimately of bringing it into that healthy state, for which every other remedy has been tried in vain to effect.

SECTION I.

Remedies to be Employed.

The remedies which are to be employed in those cases which are likely to run into, or are already become what is usually termed Glanders or Farcy, whether following Colds or other diseases, or whether accompanied with dropsical enlargement of the extremities from general debility or not, or when Glanders or Farcy occurs in debilitated, unhealthy animals, without immediately following ordinary dis-

eases, are those which possess stimulating and tonic properties, separately or united, as the following:—

STIMULATING.—Cantharides: Canella Bark (*Canellæ Cortex*); Capsicum Berries (*Capsici Baccæ*); Cubebs, or Java Pepper (*Cubeba*); Ginger Root (*Zingiberis Radix*); Grains of Paradise (*Grana Paradisi*); Pellitory of Spain (*Pyrethri Radix*); All the different sorts of Peppers, as the Common Black, Cayenne, Chili, Long and White; Pimento, or Allspice (*Pimentæ Baccæ*); Sweet Flag Root (*Calami Aromat. Radix*); Winter's Bark (*Winteræ Cortex*).

TONIC. — Angustura Bark (*Cuspariæ Cortex*); Buckbean (*Menyanthes trifoliata*); Cascarilla Bark, (*Cascarillæ Cortex*); Chamomile Flowers (*Anthemides Flores*); Gentian Root (*Gentianæ Radix*); Quassia Wood (*Quassia Lignum*).*

Any of these, when judiciously combined and given in proper doses, have the effect of greatly increasing the appetite and powers of the circulation, and consequently of improving the animal's general health and condition.

The medicine which I have found of the greatest service, whether it has been given alone or in combination with any of the others, has been *Cantharides*. They appear to me, when given internally, to act on the system in two ways; first, by stimu-

* Peruvian Bark (*Cinchona lancifolia*) may also be used with advantage, in combination with stimulants; practitioners should always powder it themselves, they will then stand a better chance of having it genuine, though not wholly so, as some specimens of bark have been seen from which the greater portion of the Quinine has been extracted. Sulphate of Quinine would always be the best preparation to use, where the price is not an object, and circumstances will allow of its being given.

lating the vascular surface of the inner coat of the stomach and intestines, thus promoting a greater formation as well of gastric juice as of the other fluids; and also increasing the appetite and digestion, and consequently forming a greater quantity of chyle or new white blood. Secondly, by absorption, their active properties being taken into the circulation, and producing in a very short time, a material change in the mucous membrane and ulcers of the nose, as well as in the ulcers of the skin. The changes which these undergo, in most instances, is in the colour of the mucous membrane, in the ulcers, and discharge; that of the membrane turning from a pale, yellowish, unhealthy cast, to a more healthy, natural, bright red appearance. (See plate I. Fig. 1, 2.) In proof of the action of this medicine, when it is applied in a large quantity to the skin, in the form of a blister, whether on the horse or on the human subject, it is frequently found that a very high degree of irritation soon follows its application, with inflammation of the kidneys, bladder, and other parts of the body, and sometimes a discharge of bloody urine, not unfrequently of a very alarming nature; effects which could not possibly follow, unless certain active portions were taken into the circulation by absorption.*

* As these effects on the system are sometimes to be observed even in horses in health, when the legs are blistered,

The action, therefore, of this medicine, when given internally, for the relief of those symptoms of disease produced by debility of the system, and when the animal is unhealthy, is by increasing the appetite, and giving tone to the circulation, and promoting all the different functions of the body, and bringing them into a healthy state, changing the unhealthy discharges of the mucous membrane of the nostrils and the ulcers, as well as the ulcers of the skin, and causing healthy granulation in those cases of Glanders and Farcy which are recoverable.

In animals previously affected, the matter or discharge will be found to have become thick and healthy—to have lost entirely the dark-coloured, glue, or size-like, unhealthy, and infectious character, and to resemble common healthy matter or pus; whatever medicines therefore are employed, whether as preventatives* or for the cure of Glanders and Farcy, the great object invariably to be kept in view, is that of bringing the system gradually

what then must be the effect of a blister, eighteen inches by twelve, on each side; and occasionally at the same time a third, a foot by nine inches, on the under part of the neck, and applied to horses labouring under violent inflammation of the lungs, and *perhaps in the dog-days*, I leave it to common sense to determine.

* By *preventative medicines*, is meant those which, when given at proper periods, prevent such diseases as Colds, Dropsy, &c., running into Glanders or Farcy.

from an *unhealthy* to a healthy state, and entirely to divest the mind of all preconceived notions relative to *animal poison* and *specific remedies*.

M. Dupuy very justly observes, "Let not medicaments, taken singly, be looked upon as *specifics*; we have no such thing; but as agents capable of producing beneficial effects in the hands of scientific practitioners, when judiciously combined, and skilfully exhibited."* And at the conclusion of his forty-seventh Lecture, Mr. Percivall states as follows:—"With regard to remedies for glanders, either in its acute or chronic form, Professor Coleman has nothing to offer. He has prescribed, by way of experiment, almost or quite, all the mineral and known vegetable poisons: preparations of arsenic, antimony, copper, zinc, mercury, &c., hellebore, aconitum, digitalis, hyoscyamus, cicuta, belladonna, &c. &c., have been, in various condemned subjects, internally administered; but all without any *specific* or *curative* effect on this awful and obstinate malady."†

Mr. Coleman has also kept horses that were Glandered, for a time on *sheep's blood*, without allowing them any kind of food, and I understand

* Translation of Dupuy's Work on Glanders, in Mr. Percivall's Lectures. Part III. page 501.

† Mr. Percivall's Lectures, 1826. Glanders and Farcy, Part III. page 464.

that some have also been crammed with balls of meat, but with no happier result than the before-named drugs.

I have witnessed a great variety of medicines administered for the purpose of curing Glanders and Farcy, but none of them have ever equalled Cantharides, or produced any thing like such rapid and decided effects and permanent benefits, especially when carefully used, either separately or conjointly with tonics and stimulants. I was first induced to give Cantharides a full and fair trial in Glanders, at the suggestion and persuasion of a professional acquaintance; and also in consequence of having been informed by Mr. Revell, an old and established practitioner in London, that he had long been in the habit of using Cantharides in small doses for the cure of Farcy, with the greatest success. I first used it in treating some Glandered horses which belonged to H. Mc'Intosh, Esq., and from the highly beneficial results which ensued, I have ever since continued it with unparalleled success. Some of the horses alluded to are alive and well, though it is now nearly three years since I first attended them; and I could adduce, were it necessary, many more similarly successful instances which have occurred since that period.

Several practitioners in and near London at my suggestion have also pursued my plan of treatment

and have met with no inconsiderable success.* I have also used Cantharides in combination with tonic and stimulating medicines in Chronic Colds, and the swellings of the legs, in horses much out of condition, and in a variety of different cases where the system was debilitated, and where there was considerable probability of running into Glanders or Farcy, and I have invariably found that the effects were quicker and greater than I ever experienced from any other medicine.

On my inquiring into the history of the internal use of Cantharides, I found that a very able surgeon of the name of Robertson, had published an excellent practical work on the use of Cantharides in the human subject, recommending it for the cure of Gleet or affections of the mucous membrane of the urethra, and unhealthy sores in the skin. I also learnt that a Dr. Greenfield, from whom Mr. Robertson acknowledges he was first led to try Cantharides, had been in the habit of using it more than a century ago, and that his success with it had been so great as to have excited the envy and malice of his professional brethren, who

* Mr. Fenwick, an able and long-established practitioner in London, at my suggestion has given Cantharides a fair trial, and has experienced great success in curing Glanders and Farcy, and chronic affections, from debility of the mucous membrane of the nose, and when given in conjunction with Vegetable bitters, considers it superior to all other medicines.

carried their *intrigues* to such an extent, as actually to procure his committal to Newgate, on a charge of prescribing *dangerous* remedies for the removal of disease. But notwithstanding such a disheartening fact before me, I have not been discouraged in endeavouring to communicate to my professional brethren and the public, the result of my investigations and experience with this very medicine, little fearing, in this *enlightened age*, the risk of being sent to Newgate,—whatever hazard I may run, as a consequence of this undertaking, of being obliged to become the inmate of a larger mansion, situated somewhere about St. George's Fields.

Mr. Sewell has informed me, that about twenty years ago the same intelligent surgeon, Mr. Robertson, suggested the internal use of Cantharides in the horse, for the cure of Glanders and Farcy, to the supreme of the College,* and that a trial of it was

* In all probability it was at or about the same period that Mr. Robertson made a similar communication to Mr. B. Clark, as well as to another London Veterinarian in extensive practice, suggesting the use of Cantharides in Glanders and Farcy. The former, in 1819, published his *Pharmacopœia Equina*, wherein he recommends the use of Sulphate of Zinc to be given conjointly with Cantharides, &c., as a remedy for Nasal Farcy Gleets, and for condition powders. And in a subsequent *edition* which was published some years after, he has acknowledged the source from whence he derived his information on the subject: he says, "Let me not by *silence*, however, be guilty of not rendering *justice* to its *discoverer*; for though *I was the first*

made, but without success; the reason of which I shall be able to show arose from its having been given in too large doses, (drachms) which causes it to produce effects directly opposite to those intended, besides adding considerably to the previous injury.

Since my very great success with this medicine, it has been used at the College, in properly increased doses, for the cure of Farcy, and in some of the worst cases that have been admitted, with complete success; but as Mr. Sewell has long boasted of possessing a cure for Glanders, (Sulphate of Copper given in a solution), I hardly need inform

that ever tried it in these cases, I owe the suggestion to the ingenious Dr. Robertson. He likewise mentions two cases of Glanders which had been cured, and which he had seen, by the “steady administration of this medicine, and the tonic medicine alternately, week by week.” Here, however, we are at a loss to know what he intended to be understood by Nasal Farcy Gleet, and the distinction between it and Glanders. Mr. B. Clark does not appear to have depended on Cantharides alone for effecting a cure in either instance, or to have recommended it with much confidence, if at all, for the cure of Glanders or Farcy. I cannot coincide in opinion with Mr. B. Clark, in assigning the action of Cantharides wholly to the stimulus it produces on the stomach, or give them that degree of latitude in preventing diseases which he appears to give them, and likewise Bots, by hinting at their being capable of checking or subduing “a tendency or disposition in the horse to inflammatory complaints, as the *caligo* of the eyes, termed moon-blindness, inflammation of the lungs and of the bones, as spavins, splents, &c.

my readers, who are acquainted with his disposition, that Cantharides has not yet received at the College a sufficiently fair trial in Glanders.

A case of Farcy which was treated in the College, is represented in plate III. This horse, with two others, belonged to Mr. Pocock, a coal merchant; two were cured in the periods of two and three weeks, and the one represented in the plate, a case of the worst description, in six. This horse was also under treatment at the same time for another disease, exfoliation of the coffin-bone of the near fore-foot, from the puncture of a nail near the side of the frog, and from the extreme pain and difficulty in standing, in consequence of his having only two sound legs, during the greater part of the recovery he was actually lying down, and the medicine was given merely as an experiment, very little if any hopes being at first entertained of his recovery, owing to his extremely low condition. But as soon as a few daily doses of the following medicine* had been given, the appetite rapidly increased, the horse considerably improved, and soon got quite well.

Now what would have been the fate of this animal, supposing an opposite plan of treatment had been resorted to?—bleeding to relieve the puncture in the foot;—rowels to cure the Farcy;

* Powdered Gentian Root, Powdered Ginger, of each $\frac{1}{2}$ oz. Cantharides in *fine powder*, from 5 grains to 10, made into a Ball with Treacle.

Why, in all probability, from the already too debilitated state in which he was, he would have been still further debilitated, and must have died, while fortunately the tonic stimulating plan tended to rouse the vital powers, and invigorate the system so as to resist the effects of the disease.

Mr. Robertson, when speaking of Cantharides, in the introduction of his very able work states as follows:—"When I first made use of that ill-understood and consequently mis-represented medicine, (and I confess I did it with fear and trembling) in a case of gleet—the gentleman had several ulcers, of some years standing, on one of his legs, which, under the influence of the Cantharides, inflamed so much that he could not even stand. In the course of a few weeks, however, without any other medicine or change of dressing to what he had used for many a day, the ulcers all healed. It was, at this time, that I ventured to believe that Cantharides was a *general* stimulant, and had caused this favourable change in my patient's system. I therefore took an early opportunity of administering that medicine, in the case of a very bad ulcer on the leg of a young lady. Similar inflammation was also produced here, which was followed by a complete cure. This lady's mother told me that her daughter had, for several years, been affected with leucorrhœa, which, during the

use of the above medicine, had disappeared. This circumstance led me to a consideration of the effects of the Cantharides in leucorrhœa, and it was, during this part of my practice, that I met with some cases, combined with irregularity in the menstrual discharge. I at length tried the Cantharides in these cases, uncombined with leucorrhœa, and experienced similar happy results. It was also, in my treatment of certain cases of gleet, that I succeeded in curing some cases of seminal emission. Thus these important facts have actually been thrust upon me. I shall proceed in the same simple unbiassed way, and indeed should count the extension of such a train of success, in such dreadful complaints, worthy of the most patient investigation.

“ My attention was, several years since, first led to the treatment of some of these diseases in perusing a publication by Dr. Greenfield, written about a century ago, and containing some original observations on that subject. His book has many faults ; but these, though they may tarnish, do not render useless its better parts.

“ Though Dr. Greenfield’s account of the powers of this medicine be very extravagant, yet it has, in many points, internal evidence of consistency and truth. All the complaints in which it is there said to be useful, have one character ; they are those

of extreme debility, and, therefore, might all be rationally expected to be alleviated by similar means." *

The following extracts are taken from that part of Mr. Robertson's able work, in which he treats on the effects of Cantharides in the human subject:—

“ Phenomena which succeed the admission of the Cantharides into the System.”

“ The pulse is strengthened, the appetite generally improved, the mind rendered more cheerful, the matter or discharge, from any abraded or ulcerated surface, becomes opaque, is inspissated, and this is termed pus, while a greater or less degree of pain generally affect the parts, whence the discharge proceeds. This goes off, if the medicine be omitted, increases if continued, and is kept up if the dose be only diminished.

“ The morbid discharge also varies in quantity. Sometimes, on taking the first doses, it is increased, but generally diminishes daily, and at last disappears, leaving the parts capable of performing all their natural functions.”

* Robertson on the Generative System. 1827. Pref. pp. 23, 24, 29, 30.

“ Effects of Cantharides on the General System.

“ I hope I have, in the preceding pages, proved that when the Cantharides is first taken internally, in moderate doses, it enlivens the functions of mind and body, increases the celerity and force of the circulations, generally improves the appetite, and increases the flow of urine and perspiration. Nor are their effects lessened by using them for any length of time, for I have frequently given them for years, at the expiration of which the patients had imparted to their body similar stimulant effects as at first, by perhaps one-twentieth part of the medicine, and such individuals were stouter than they had been for many years before. Nor did they, in the slightest degree, relapse into their former debilitated state, on entirely leaving off the medicine.

“ Modus operandi of the Cantharides.

“ The more evident changes, as evinced by either local or general phenomena, one of an inflammatory nature, and the diseases in which they are chiefly beneficial, *are those of debility.*

“ Cantharides gives a vigour to the debilitated parts, which they themselves could not exert, and ultimately it invigorates and renders them able to

perform their natural functions, when it becomes proper to withdraw that medicine from the system.

“Nor do we find, however violent the action which arises from the introduction of this substance into the general constitution, that such action, however much it may increase the animal powers, will produce any tendency to support suppuration. In certain parts, greatly disorganized by previous disease, the Cantharides acts so as either to restore them to their healthy functions, or, if too far diseased, so that they cannot be restored to these natural functions, then suppuration seems unavoidable; and the action of that medicine, on the general system, so invigorates the animal powers as to enable them to force the morbidly affected part toward the skin, and thus relieve the system of an evil, and a cause of irritation, which the previous condition of these powers were incapable of expelling.

“It is now many years since I began my researches respecting the nature and efficacy of this substance. My first attempts in the way of publication, were on a scale contracted enough, but I am happy to find, that the principles, even then announced, contained no erroneous nor hurtful doctrine, which, after experience, has made one retract. The fault alone lay in my having too contracted a notion of the powers of that valuable medicine. Since that period, I have, in part, re-

moved that objection, having proceeded somewhat further in my inquiries. Even yet, I am far from believing that I have ascertained nearly the whole effects of that medicine, but by patient perseverance, I hope I shall still further develope their powers. If, however, I am deprived of this, the specimen I have given the world will, independently of party spirit, or any similar bar to the advancement of every valuable fact, follow out these researches, that the full powers of such an active medicine may be known. Thus, and by similar investigations, we would soon banish from our pharmacopœias that miscellaneous assemblage of drugs, which can never be of use but to him who wishes to cover his mistakes and blunders in a multiplicity of, at best, unmeaning substances, who can shield himself from detection where mystery prevails, but who would be afraid to proceed on the principles of simplicity and truth, and whose chief occupation is to deprecate improvement." *

* Robertson on the Generative System. 1827. Pages 516—534.

CHAPTER VII.

REMARKS ON CANTHARIDES, AND THEIR BENEFICIAL EFFECTS ON THE SYSTEMS OF HORSES, WHEN JUDICIOUSLY ADMINISTERED—UNTOWARD EFFECTS LIABLE TO RESULT FROM THEIR IMPROPER USE—NECESSARY PRECAUTIONS TO BE OBSERVED IN USING MEDICINES.

AFTER giving Cantharides a fair trial on horses which have been labouring under Glanders and Farcy, whether alone or in combination with any of those tonic and stimulating medicines which have been enumerated, I find their effects similarly and equally beneficial, and exactly corresponding with those which Mr. Robertson states are produced on the human subject.

Very shortly after the regular and proper use of Cantharides, the appetite of the horse improves, he becomes more cheerful, his eyes brighten, and appear more transparent, his head is more erect, and the nostrils more distended; the coat also lays smoother, the swellings of the extremities, the diseased lymphatic vessels and their glands, gradually become less, and the animal, generally speaking, rapidly improves in condition; and finally the pulse loses that quickness and irregularity so characteristic of debility, and becomes

fuller and stronger; and the blood when examined will be found to be brighter, heavier, and of a firmer consistency. The membrane of the nostrils and ulcers, (as well as those of the skin in Farcy) and the lining membrane of the lips and mouth become redder, and have a more natural appearance, and the discharges or matter from the diseased parts, the nostrils in particular, will be found to flow more freely, and not adhere to the edges; it will also soon be found to lose its dark-coloured, and glue or size-like appearance, and to resemble more nearly the white healthy matter or pus discharged from the nostrils in cases of true Strangles, or in Colds. Whatever treatment therefore is adopted, the great object to be kept in view is that of bringing the *unhealthy* and infectious discharges in Glanders and Farcy into a state similar to that observed in Colds, &c. This restoration is only effected by rousing and invigorating the system, and bringing it into a healthy state, the only way by which the unhealthy discharges can be properly changed in appearance. The next visible effects produced are by the ulcers soon exhibiting healthy granulations, both those in the nasal membrane in Glanders, and skin in Farcy, gradually healing, and the discharge becoming less as the animal gets stronger.

The action of Cantharides, as well as those medicines with which they are combined, operate

by removing the unhealthy action or disposition of the system, so as to produce a new and a more healthy one, and by their tonic and stimulating effects, give tone and energy to the general circulation; and not, as some may suppose, by any *Specific* effect, or by *combining with an imaginary poison* supposed to be contained in the blood of animals.

When Cantharides begin to produce an effect on the system, the discharge is sometimes increased, but always of a more healthy character; and in some instances fresh ulcers appear on the membrane of the nostrils, and also occasionally abscesses in the skin; but these effects are not to be considered as discouraging, as they are only *indicative of the commencement of a healthy suppurative process*. Any attempts, therefore, to check this by *bleeding, rowels, setons, purging, or diuretic* medicines, an every-day and common practice, is most injurious, and certainly the very worst plan that can be resorted to, and only calculated to prevent the animal from recovering.

What reasoning first led to the introduction of Setons and Rowels, and to their being considered of use as counter-irritants, with a view to cure Glan-
ders and Farcy, or what good they were ultimately intended to effect, I am at an utter loss even to conjecture; but of this I am quite positive, that the

injury they do is immense, always weakening the system, and occasionally destroying any chance we might have had of doing good, by pursuing a proper and rational mode of treatment, by draining off a portion of blood under the form of matter or pus, from the system, particularly from those parts in which they are actually placed, as the face, breast, thighs, &c. These parts when affected, always require a greater quantity of blood to restore the loss of texture, so that every depletive measure ought carefully to be avoided. I can only account for such treatment having arisen, in consequence of practitioners not knowing that Glanders and Farcy depended on direct debility, and in most instances were the sequel of inflammatory diseases, always requiring for their cure an opposite, or invigorating mode of treatment.

Some horses of course require a much longer time to recover from Glanders or Farcy than others, depending on the age, previous condition, nature and extent of disease, and employment of the animal, &c. And as a general rule, it will be found that those which have Farcy will recover much quicker than those which have Glanders. The extreme difficulty which the old practitioners found in curing Glanders in comparison with Farcy, no doubt was the cause of Solleysel's stating that Farcy was sometimes curable, but bad cases of Glanders

never. By these it appears he meant to imply those in which the lungs were highly diseased; for on further alluding to Glanders, he states that in those cases which were curable, it frequently took from two to three months to accomplish it. The reason why Glanders is more difficult to cure than Farcy, is in consequence of the living power being less vital and active in the mucous membrane, cartilage and bone, than it is in those of the skin, which is highly vascular.

We have a few instances of Glanders and Farcy recovering without the use of medicine, where the animals have been kept well, and not over-worked. It would surely be a bold assertion to say nature was wholly incapable of effecting a cure in some few cases, without our *mighty* aid; but such it ought to be remembered are exceptions, rare occurrences, and only take place under particular and very favourable circumstance. And again, on the contrary, there are instances where Glandered horses have had numerous remedies bestowed on them without avail, principally cases where the symptoms have been confined to the head alone. Horses thus affected are enabled to work and support their condition, and with the discharge appearing white, healthy, &c., coming away at intervals; these cases at first no doubt had the usual appearances of Glanders, and the animal had been

in that unhealthy state which has already been stated, but from the strength of the system they have ultimately regained a healthy state, while in consequence of extensive disease of the mucous membrane of the nose and cavities, it has continued as a local affection in a chronic state. These are cases similar in nature to those which have been described by La Fosse, some of which he successfully treated by injections applied to the diseased surfaces, after the use of the Trephine, and there is but little doubt but this mode of treatment might be adopted in the sort of cases we have just alluded to, with great benefit, but the great difficulty of reaching all parts with any application, will always render a cure doubtful.*

SECTION I.

Untoward Consequences liable to result from the improper use of Cantharides.

As by the proper use of Cantharides in Glanders and Farcy as well as in various other cases of

* Very excellent instruments for Trephining the frontal Sinuses, and injecting fluids, as well as other Veterinary Surgical Instruments, may be had of Mr. Long, 217, High Holborn.

debility, or want of condition, we derive the best effects, whether given alone, or conjointly with tonic and other stimulating medicines; so on the contrary, are we liable to untoward circumstances when they are incautiously made use of by persons who through ignorance of their powerful effects, administer them in too great doses, and thus produce the very contrary effects from those desired, some of the consequences of which are as follow :—Loss of appetite, rough coat, dullness of the eyes, great langour, drooping of the head, ears, and eye-lids, contracted nostrils, increased respiration, hot and dry mouth, inside of the lips, nose, and eye-lids red and inflamed, the tongue hot and red, the discharge from the nose greater, and the ulceration of the nasal membrane increased, and those in the skin, instead of healing, are found gradually to extend, and the extremities if enlarged, to become larger. The pulse is usually found irregular, and the blood slower in coagulating, and not so firm. On some occasions there is a hard, dry, and frequent cough, with considerable general irritation, continued efforts to stale, though this effect is not so common in the horse as stated by Mr. Robertson to be the case in the human subject. In most cases where these untoward circumstances take place from an over-dose being given, the body is bound in a greater or less degree.

When any of these important occurrences happen, which they are very rarely, if ever, liable to do, unless from an over dose incautiously given, the following plan of treatment is necessary to be pursued in order to effect their removal. In the first place the use of Cantharides must be wholly discontinued, the animal kept cool and quiet, with chilled water always within his reach; emolient clysters should also be immediately administered, and repeated as occasion may require; mashes without corn, should be given, made with bran and linseed, or linseed meal, green food, carrots, and only a moderate allowance of hay. Laxative medicine should likewise be administered, as one drachm or upwards of Cape Aloes in a ball, taking due care to proceed cautiously, otherwise they may produce irritation and inflammation in the intestines; and if, unfortunately, a very high degree of irritation has been created in the system, from an over dose of the Cantharides, a moderate quantity of blood may sometimes be abstracted with advantage, But this ought not to be resorted to indiscriminately; for in many cases of this sort the system will not bear lowering, and any violent and bold treatment of this description only retards the cure by still further reducing and debilitating the animal. If this plan of management be carefully pursued for a few days, the horse will easily recover from the symptoms, and all irritation having sub-

sided, and the Cantharides may be again resorted to, taking care to begin with a much smaller dose, —not more than half the former dose, or perhaps even still better to commence with only one-third the quantity.

SECTION II.

Necessary precautions to be used in giving Cantharides and other Medicines.

The principal precautions to be attended to in using Cantharides internally in the horse are, not to administer them either at the *commencement* or *early stages* of inflammatory diseases, or in too *large quantities for a dose*, or too *frequently* to *repeat* them. For they are only proper to be used, and ought not otherwise to be administered, but when the symptoms of disease are of a chronic or slow form and nature; that is, when the system is either in a state of direct debility, or approaching to it; and likewise in those horses which have been very much reduced, and that are out of condition, and in a state predisposed to disease from any of the various exciting causes, as bad and irregular feeding, hard work, autumnal grass, low keep at straw yards, &c., or where they have been

greatly reduced by repeated bleedings, rowels, setons, purging, or diuretic medicines, or otherwise badly treated and improperly managed, during long continued cases of Strangles, Colds, Inflammation of the Lungs, Dropsy, Grease, &c., when they run into a chronic, low, and debilitated state. Under these circumstances they are given, not with any intention of subduing inflammation, but for the sole purpose of setting up a new action, and of thus rousing the system into a more healthy and vigorous state; and when given at the sequel of diseases, not only for the purpose of curing the disease, but also of preventing them from running into, and exhibiting that train of symptoms which are denominated Glanders and Farcy.

This medicine is therefore highly useful in all those affections of the nasal membrane and skin, that are designated by practitioners as *doubtful*, or *bordering on*, *suspected*, or *approaching* to Glanders and Farcy; and if given in due time acts, as a preventative of their becoming confirmed cases, by gradually restoring the affected parts to a healthy and natural state and appearance. Those cases, therefore, in which I have found *Cantharides* so very useful, and to which they are only properly applicable, are those of direct debility; where the system has been actually in that state, or nearly approaching to it, or in a particularly *unhealthy* state; and I will venture to assert that no

medicine has ever yet been in use that has proved so effectual, and that it will, when carefully used in the way I shall proscribe be found the most valuable desideratum that the Veterinary practitioner and horse-owner have yet had recommended to their notice.

CHAPTER VIII.

DIRECTIONS FOR THE PROPER USE OF CANTHARIDES
AND OTHER MEDICINES — FEEDING—EXERCISE, &c.

WHETHER *Cantharides* are used alone, or combined with other stimulating and tonic medicines, it is always requisite carefully to take into consideration the age, size, strength, and condition of the animal to which it is to be administered, and if possible, what kind of work he had been previously accustomed to perform. This is necessary to be attended to, whether with a view of getting the animal into condition, or curing disease, and the only proper way of proceeding, and of ascertaining what beneficial effects are produced, is to commence with a small dose, which must be cautiously increased every week or ten days; for if the medicine be increased in disproportionate rates to the animal's strength, all those symptoms which I have described, with an inflammatory state of the system, is liable to be the result; thus the very opposite effects from those intended might be produced, a circumstance very likely to take place, should the medicine get into the hands of those unacquainted with its powers and proper doses, and the more incapable they are of judging of these the

more likely are the consequences to be dangerous, especially when administered to horses not in a fit state to warrant their use.

The following are the proportions and form of the ball which I have found best to commence with, to be afterwards increased as circumstances may admit and require.

[No. 1.]

For a Middle Sized Saddle Horse.

Cantharides, in *fine powder*,
four grains.

Ginger Root powdered, one
drachm.

Gentian do. do.

Caraway Seeds powdered, of
each, two drachms.

Treacle or Honey sufficient
to form one Ball.

[No. 2.]

*For a Large Carriage or
Dray Horse.*

Cantharides, in *fine powder*
six grains.

Ginger Root, powdered.

Gentian do. do.

Caraway Seeds, do. of each
two drachms.

Treacle or Honey sufficient to
form one Ball.

A ball may be given every, or every other day, either in the evening or morning; but the last thing in the evening and after feeding will always be the best time. If the horse's appetite increases, and he goes on well, which he is almost certain to do under this plan, for the course of a week, ten days, or a fortnight, according to circumstances the dose may be increased by giving the following ball.

[No. 3.]

For a Middle Sized Saddle Horse.

Cantharides, *in fine powder*,
six grains.

Ginger Root, powdered.

Gentian do. do.

Caraway Seeds, do. of each
two drachms.

Treacle or Honey sufficient to
form one Ball.

[No. 4.]

For a Large Carriage or Dray Horse.

Cantharides, *in fine powder*,
eight grains.

Ginger Root, powdered.

Gentian do. do. each two
drachms and a half.

Caraway Seeds, do. one
drachm.

Treacle or Honey sufficient to
form one Ball.

After a week, ten days, or a fortnight's use of these balls, presuming the horse to go on well, they had better be wholly discontinued for four or five days, or a week, when you may re-commence with No. 1, or No. 2, for a week more, and afterwards give the following :

[No. 5.]

Cantharides, *in fine powder*,
ten grains.

Ginger Root, powdered.

Gentian do. do. each two
drachms and a half.

Caraway Seeds, do. one
drachm.

Treacle or Honey sufficient to
form one Ball.

[No. 6.]

Cantharides, *in fine powder*,
twelve grains.

Ginger Root, powdered.

Gentian do. do. of each
three drachms.

Treacle or Honey sufficient
to form one Ball.

It is necessary to remark, that No. 6, is the greatest quantity of Cantharides generally required; and that all the drugs should be of the best quality, and carefully prepared; and that the horse ought to be allowed water much oftener than usual during the administration of the medicine.

In conclusion, provided no untoward symptoms have appeared, and the animal from having gained strength, feeds and goes on well, and from becoming accustomed to the medicine, will bear a greater dose than at the commencement; I must require of you carefully to watch its effects; and by gradually increasing or diminishing the dose according to its action on the system; resting for a short interval between each increase of dose; its valuable effects will soon become apparent; for even after using the medicine for only a fortnight or three weeks, the horse's appetite will be much increased, and he will be found otherwise improved in strength and condition. I also particularly recommend the suspension of Cantharides for a short time between each increase of dose, as its stimulative properties are otherwise apt to become neutralized by its continuous application to the system.

Cantharides administered in this way, either separately or with other medicines, I can positively

assert is a most invaluable and useful medicine, and one that can easily and safely be resorted to, whether for horses out of condition, in a state of direct debility, approaching to, or actually affected with Glanders and Farcy; if the directions which have been laid down are strictly attended to, carefully keeping in mind that the full dose should not be exceeded, or very triflingly so even on extraordinary occasions. Cantharides, in combination with good feeding, are not only most important auxillaries to medicines, but they are in many instances the most valuable remedies that we possess, their effects being certain if ably directed.

I shall now shortly draw your attention to FEEDING, EXERCISE, and AIR, all of which are very highly essential to the recovery of an animal, and produce the best effects on the system, by invigorating it, and thus assist in causing the diseased parts, as the nasal membrane, the ulcers in it, as well as those of the skin, with their discharges, to become more healthy, and to heal, unless in those cases where the lungs or other important internal organs of life are diseased.

Every description of food which is given to horses while under the treatment just laid down, and in all cases where Cantharides is required to be used, should always be of the very best quality,

and that which contains the most nutrition, as good old split beans, sound oats, a portion of the best pollen or gurgions made moist, and mixed with chaff and corn, prime meadow hay, carrots, &c.; and it is of great importance that the horse be *regularly* fed, and that he have a sufficient quantity, given, and that he is supplied with water more frequently than usual. In the spring, and during the summer, a moderate quantity of green meat may also be given, but it must always be limited, and in conjunction with a fair portion of corn, and hay.

As regards labour and exercise, if the horse is capable of working, he should only be made to do a moderate quantity daily, never over exerted, or pushed beyond his strength, or forced into a pace quicker than a brisk walk or gentle trot; taking great care not to expose the animal to the weather, especially in the autumn, by allowing him to stand about, when it is cold, wet, and changeable. These precautions are not given in consequence of any risk liable to be produced from exposure whilst under the medicine, as it materially differs from active mineral preparations, but solely on account of the debilitated, susceptible and predisposed state of the horse. If it should so happen at any time that the animal unavoidably becomes exposed to wet or cold, let one of the balls be

given to him as soon as he gets into the stable, as it will stimulate the stomach, and thus induce the horse to feed quicker and better than he otherwise would, and by producing a re-action possibly prevent untoward circumstances.

If the animal is not in a fit state to work, he ought to be kept in a loose box, where pure air is admitted, moderately exercised every day, and fed in the way already stated. In all instances the food should be gradually increased; for most horses while taking Cantharides, eat voraciously, if they can get at it, and if horses are allowed four, five, or six feeds a day at the commencement of the treatment, and having been, perhaps, before kept very low, and otherwise reduced, it would be doing much more harm than good. But in every instance a horse ought not to have less than two or three feeds a day of good oats, split beans, &c., and the number ought to be increased according to the state of the horse, particularly if he is able to perform a moderate portion of work, up to five or even six feeds a day, independent of a sufficient quantity of hay.

The proportions of Cantharides which I have set down will in nearly every instance be found to effect what is required; that is, when the animal is in a recoverable state, and the only mode of effecting it is by beginning with a moderate dose, and very cautiously increasing it, and by continuing it

a sufficient time; and on no account to resort to such large doses as drachms, or even a scruple, as they invariably destroy the animal's appetite, and produce a high degree of inflammation in the intestines, kidneys, bladder, and general inflammation of the system, and frequently death.* It ought also to be well remembered that when large doses of Cantharides are injudiciously given, that a contrary effect is also produced; for after the animal has recovered from the shock, it will be found that he has experienced more injury than can be restored perhaps in a month or two, in some instances never. I therefore invariably proceed very cautiously, and avoid if possible an over dose, and carefully keeping the ground good which has

* Having on a former occasion alluded to Cantharides having been tried some years ago at the College unsuccessfully, in consequence of too large quantities being given at a time, I still have to regret that they have been again administered to a condemned horse, in such monstrous doses, and so rapidly increased, as soon to amount to above half an ounce, which produced many of those untoward symptoms I have described as invariably following the administration of such destructive quantities. On examination after death very evident appearances of inflammation of the intestines, &c. presented themselves; and Mr. Sewell *most liberally* embraced this opportunity of stating to those present, that the effect of the medicine was just the same as had been observed when Cantharides had been tried years ago; *that when given in such large doses they were sure to destroy, and that in small ones they could not possibly be of any service*; consequently I have again to state Cantharides has not received even one fair trial in Glanders, at the Royal Veterinary College.

been made, "slow and sure" should be motto always in view; no forced means can effect a cure; and the idea of giving medicine for the sole purpose of ascertaining how much an animal would be destroyed by, which I have so frequently seen practised, has long since convinced me of the wide difference between the *use* and *abuse* of medicine, and to abandon totally all notions such as a little does good, a greater quantity must do much more. I therefore once more caution my readers against the use of scruple and drachm doses of Cantharides.

It is not uncommon to meet with some cases of *suppressed* Strangles, common Colds, Distemper, general and local Dropsy, accompanied with considerable debility, requiring a stimulus, but where even Cantharides alone, or in combination with other medicines, might possibly have an untoward effect, by increasing the circulation too rapidly. In such cases, the following balls may be given advantageously, instead of those before prescribed.

[No. 1.]

Ginger Root powdered, half a
drachm.
Gentian do. do. one drachm.
Caraway Seeds, do.
Liquorice Root, do. each.
two drachms.
Treacle or Honey sufficient
to form a Ball.

[No. 2.]

Ginger Root powdered, one
drachm.
Gentian do. do. one drachm
and a half.
Caraway Seeds, do. three
drachms.
Treacle or Honey sufficient
to form a Ball.

[No. 3.]

Ginger Root powdered, one drachm and a half.

Gentian do. do. two drachms.

Caraway Seed, do. three drachms.

Treacle or Honey sufficient to form a Ball.

[No. 5.]

Capsicum Berries, powdered, fifteen grains.

Ginger Root, powdered,

Allspice, powdered of each two drachms.

Cascarilla, or Angustura Bark, powdered, three drachms.

Treacle or Honey sufficient to form a Ball.

[No. 4.]

Capsicum Berries, powdered ten grains.

Ginger Root, do. one drachm and a half.

Allspice, do.

Cascarilla Bark, powdered, each two drachms.

Treacle or Honey sufficient to form a Ball.

[No. 6.]

Capsicum Berries, powdered, one scruple.

Ginger Root, do.

Canella Bark, do. each two, drachms.

Cascarilla, or Angustura Bark, do. three drachms.

Treacle or Honey sufficient to form a Ball.

These balls even require to be given with discretion, according to the age, size, strength, and condition of the animal, and continued daily, or at proper intervals, until the appetite recovers. In very weak horses, half the quantity had best only be given at the commencement, and increased as they recover strength. These balls, or any medicine of a similar nature, are always improper to be given at the early stages of inflammatory diseases, but only when those have subsided, or when they

have assumed a chronic or slow form. If the flagging powers of the system were to be thus supported at the sequel of diseases, and horses similarly treated when out of condition, (aided by laxatives, balls, &c.) much future mischief might be prevented, and even slight cases of Glanders and Farcy cured by these balls alone ; and they may be advantageously used a short time previously to the use of Cantharides.

1

A COPY OF THE PHARMACOPŒIA IN USE AT THE ROYAL
VETERINARY COLLEGE.

EGYPTIACUM.

Verdigrise (Subacetate of
Copper),..... 18 oz.
Alum, in powder, 6 oz.
Vinegar 12 oz.
Treacle 10 oz.
Boil gently together, and add
Sulphuric acid $2\frac{1}{2}$ oz.

BALLS.

Cathartic Mass.

Cape Aloes,..... 8 lb.
Treacle 3 lb.
Olive Oil 1 lb.
Soft Soap 1 lb.

Melt together in a water bath,
and stir till well mixed.—Dose
from one ounce to two.

Cordial Mass.

Powdered Ginger,
——— Gentian or Liquor-
ice, each equal parts;
Treacle, sufficient to form a
mass.—Dose from one to
two ounces.

Diuretic Mass.

Yellow Resin, powdered $1\frac{1}{2}$ lb.
Hard Soap 1 lb.
Pulverised Nitre..... 1 lb.
Soft Soap, enough to form a

mass.—Dose an ounce to an
ounce and a half.

Fever Balls (Alterative.)

Cape Aloes..... 4 oz.
Linseed Meal..... 12 oz.
Treacle, sufficient to form 32
balls.

Fever Balls (Diuretic.)

Yellow Resin, powdered $\frac{1}{2}$ lb.
Linseed Meal..... 10 oz.
Treacle, sufficient to form 32
balls.

Fever Ball.

Nitrate of Potass 1 oz.
Camphor and Emetic Tartar,
each two drachms : make in-
to a ball with Treacle.

Tonic Balls.

Sulphate of Iron, from one
drachm to four.
Powdered Ginger, two drachms.
Linseed Meal and Treacle, suf-
ficient to form a ball.

OR,

Sulphate of Copper, from one
to two drachms.
Powdered Ginger 2 drachms ;
Linseed Meal and Treacle, suf-
ficient to form a ball.

Worm Balls.

Submuriate of Mercury (Calomel) 2 oz.
Linseed Meal, 1 lb.
Treacle, sufficient to form a mass.—Divide into 32 balls.

INFUSIONS.

Infusion of Cantharides.

Cantharides, in powder 2 oz.
Vinegar, two pints;
Macerate ten days, pour off the liquor, grind the flies with a handful of fine sand, return the whole into the bottle, macerate a week, then strain.

Infusion of Tobacco.

Tobacco 1 lb.
Boiling Water, one gallon: infuse twenty-four hours, and strain.

Compound Infusion of Tobacoc.

Infusion of Tobacco, two pints.
Oxymuriate of Mercury, Muriatic Acid, each one drachm: dissolve the oxymuriate in the acid in a glass mortar, and add it to the infusion of tobacco.

INJECTIONS.

Injections for Fistulous sores.

Oxymuriate of Mercury, 1 dr.
Muriatic acid 2 drs.
Water, or Rectified Spirits, five drachms: Mix.

LINIMENTS.

Liniment for Canker, &c.

Sulphate of Copper .. 12 oz.
Acetic Acid 6 oz.
Treacle 3 lbs.
Melt these together, and, when nearly cold: Mix.

OR,

Verdigrise 9 oz.
Alum, powdered 6 oz.
Treacle 1½ lb.
Boil together, and add Sulphuric Acid, three ounces: Mix.

Tar Liniment.

Oil of Tar (rectified),
Common Olive or Sperm Oil, each one pint: Mix.

Turpentine Liniment.

Oil of Turpentine, and Olive Oil, each, one pint: Mix.

MIXTURES.

Thrush Mixtures.

Liquid Tar 4 oz.
Sulphuric Acid 1½ dr.
Mix.

Scalding Mixture for Pole Evil.

Oxymuriate of Mercury 1 dr.
Muriatic Acid 2 dr.
Olive Oil, (boiling,) one pint.
Dissolve the oxymuriate in the acid, add it to the boiling oil, and inject as soon as possible.

OINTMENTS.

Alum Ointment.

Common Turpentine, Lard, each
one pound ;

Alum, in powder 1½ lb.

Melt the lard and turpen-
tine, then add the powdered
alum : stir till cold.

N.B. In summer use tallow for
the Lard, or one-fourth oil
with tallow in the winter.

*Blistering or Cantharides
Ointment, (strong.)*

Turpentine Ointment . . 2 lb.

Cantharides, in powder . . 8 oz.

Euphorbium, in fine pow-
der 2 oz.

Soften the turpentine oint-
ment by heating it, then stir
in the flies and euphorbium
powder.

*Blistering or Cantharides
Ointment, (mild.)*

Lard 4 oz.

Melt and add

Oil of Turpentine, and Cantha-
rides in powder, each one
ounce : stir till cold.

Quicksilver Ointment, (strong.)

Quicksilver 1 lb.

Balsam of Sulphur . . . 1½ oz.

Rub well together, and add Lard
one pound.

*Quicksilver Ointment.
(Nitrate.)*

Quicksilver 3 oz.

Nitric acid 6 oz.

Dissolve :

Lard 8 oz.

Olive Oil 12 oz.

Melt together, add the acid,
&c., and stir till cold.

Turpentine Ointment.

Common Turpentine . . 1 lb.

Lard 3 lb.

Melt together.

N.B. In summer use tallow for
the Lard, or one-fourth oil
with tallow in winter.

POWDERS.

Astringent Powder, (strong.)

Sulphate of Copper

Armenian bole, in powder, each
one pound : Mix.

SOLUTIONS,
FOR LOTIONS.*Solution of Alum.*

Alum ½ lb.

Boiling Water, seven pints and
a half : stir till dissolved.

Solution of Subacetate of Lead.

Semi-vitreous Oxyde of Lead,
Lythorge, thirty-six ounces ;
Vinegar one gallon.—Boil to
six pints and strain.

*Solution of Subacetate of Lead.
(Dilute.)*

Solution of Subacetate of Lead,
Rectified Spirit, each two drs.
Water, one pint : Mix.

N.B. If used for the eyes, two
pints of water.

Solution of Sulphate of Copper.

Sulphate of Copper 2 lb.
Boiling Water, one gallon : stir
till dissolved.

Solution of Sulphate of Zinc.

Sulphate of Zinc 2 lb.
Boiling Water, six pints : stir
till dissolved.

N.B. These are saturated, and
may be used alone or diluted.

Stopping for the Feet.

Liquid Tar 4 oz.
Oil of Tar, or Turpentine 2 oz.
Mix.

TINCTURES.

Compound Tincture of Myrrh.

Gum Resin of Myrrh, powdered, one pound ;
Aloes, one pound ;
Rectified Spirit, one gallon ;
Macerate fourteen days, often
shaking it up, then pour it
off for use.

Tincture of Opium.

Opium, in powder 2½ oz
Proof Spirit, two pints.
Macerate fourteen days, and
strain.

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